HITACHI

TK | No.3688E,G,F

VM-E8E,E(AU)
VM-E1OE,E(UK),E(GR)
VM-E15E,E(UK)
VM-E16E,E(AU)

SERVICE MANUAL
Wartungsanleitung
MANUEL DE DÉPANNAGE *Technical Data*

SUPPLEMENT Ergänzung SUPPLÉMENT

The circuit boards used in the models shown in the table below have been changed from the following serial numbers. This service manual shows only the changed sections.
Check the serial number of the product to be serviced and use this manual together with the existing service manuals listed below when servicing.

Die Leiterplatten, die in den in der nachfolgenden Tabelle aufgeführten Modellen verwendet werden, wurden ab den folgenden Serien-Nummern Geändert.
Diese Wartungsanleitung enthält nur die geänderten Abschnitte.
Die Serien-Nummer des zu wartenden Produkts kontrollieren und diese Anleitung gemeinsam mit den vorhandenen, nachfolgend aufgeführten Wartungsanleitungen für die Wartung verwenden.

Les cartes de circuits imprimés qui sont utilisées dans les modèles qui sont indiqués dans le tableau ci-dessous ont été modifiées à partir des numéros de série suivants. Ce manuel de dépannage ne mentionne que les sections qui ont été modifiées.
Vérifier le numéro de série de l'appareil qui doit être dépanné et se servir de ce manuel conjointement aux manuels de dépannage qui ont été édités auparavent au moment de procéder à un dépannage.

Model Modell Modèle	Changed board Geänderte Leiterplatte Carte de circuits imprimés modifiée	Serial Number Serien-Nummer Numéro de série	Existing manual (No.) Vorhandene Anleitung (Nr.) Manuel actuel (No.)
VM-E8E	MAIN	10303001 and later	Technical Data (No. 3434E)
VM-E10E	MAIN	10306501 and later 10306501 und danach 10306501 et après	Technical Data (No. 3424E) Technische Daten (Nr. 3426G) Donnés techniques (No. 3428F)
VM-E15E	MAIN	10302301 and later 10302301 und danach 10302301 et après	Technical Data (No. 3430E) Technische Daten (Nr. 3432G) Donnés techniques (No. 3453F)
VM-E16E	MAIN	10301701 and later	Technical Data (No. 3435E)

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT
Änderungen der Technischen Daten und Teile im Sinne ständiger Verbesserung vorbehalten.
LES CARACTÉRISTIQUES TECHNIQUES ET LES PIÈCES SONT SUJETTES À MODIFICATION AUX FINS DE PERFECTIONNEMENT.

8mm VIDEO CAMERA/RECORDER, 8-mm-Video-Kamerarecorder, CAMESCOPE 8mm

April 1992 Video Systems Operation

CAUTION

Lithium battery danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacuturer's instructions.

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers' Critical parts are marked with ⚠ in the schematic diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safety operate without danger of electrical shock.

Vorsicht

Bei falscher Verwendung von Lithium-Batterien besteht Explisionsgefahr. Nur durch gleichen oder gleichwertigen Typ ersetzen, wie er von dem Gerätehersteller empfohlen wird. Die verbrauchten Batterien gemäß Anleitung des Herstellers vermüllen.

Sicherheitshinweise

Die folgenden Vorsichtsmaßnahmen sind einzuhalten, wenn Wartungsarbeiten an diesem Modell ausgeführt werden.

1. Da verschiedene Teile dieses Gerätes besondere Sicherheitsfunktionen aufweisen, nur Hitachi Original-Ersatzteile verwenden. Besonders kritische Teile im Netzteil dürfen nicht durch Teile anderer Hersteller ersetzt werden. Die kritischen Teile sind in den Schaltplänen mit dem Symbol ⚠ gekennzeichnet.
2. Bevor das reparierte Gerät an den Kunden ausgeliefert wird, muß der Wartungstechniker das Gerät einer gründlichen Prüfung unterziehen, um optimale Betriebsicherheit sicherzustellen und die Gefahr elektrischer Schläge auszuschließen.

ATTENTION

Présence de pile au lithium; risque d'explosion si la pile n'est pas remplacée correctement. Remplacer en utilisant essentiellement le même type de pile ou un type équivalent par le fabricant du matériel. Mettre les piles au rebut conformément aux installations spécifiées par le fabricant.

PRÉCAUTIONS DE SÉCURITÉ

Le précautions de sécurité suivantes doivent être prises au cours du dépannage.

1. Etant donné que de nombreaux organes de cet appareil possèdent des caractéristiques de sécurité spéciales, il est impératif de toujours faire usage de pièces et composants de rechange Hitachi d'origine, ceci s'appliquant notamment aux pièces et composants critiques du circuit d'alimentation que ne doivent en aucun cas être remplacées par des pièces et composants d'une autre fabrication. Les pièces critiques sont accompagnées du symbole ⚠ pour identification dans les schémas de principle.
2. Avant de rendre l'appareil réparé au client, le dépanneur doit procéder à des essais de fonctionnement complets pour être certain que l'appareil ne présente aucun danger ni offre de risque d'électrocution.

CHAPTER 5 SCHEMATIC DIAGRAM AND CIRCUIT BOARD DIAGRAMS
WHEN USING THIS SERVICE REFERENCE MATERIAL

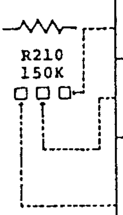
1. Markings in Schematic and Circuit Board Diagrams

(1) Parts with marks "■" attached to circuit numbers in the schematic and circuit board diagrams are discrete components.
(2) Parts with marks Ⓩ in the circuit board diagrams are leadless jumpers.

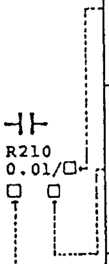
2. How to Read Abbreviations

Values, dielectric resistances (power capacitances), tolerances, grades of resistors (excluding variable resistors, etc.) and capacitors are indicated in the schematic diagrams using abbreviations. Collate these abbreviations and the following tables for reading abbreviations to replace parts correctly.

2-1. Resistors

	Value	No indication .... ohm K .... kohm
	Tolerance	No indication .... ±5% K .... ±10% M .... ±20%
	Power capacitance	No indication .... 1/8W (All capacitances other than 1/8W are indicated in schematic diagrams with W omitted)
	Type	No indication .. Carbon film fixed RC .... Carbon solid RW .... Power-type wire-wound solid RS .... Metal oxide film solid RN .... Metal film solid
Example R210 150K .... 150 kohm, carbon solid RC.1/2.K 1/2W, ±10%		

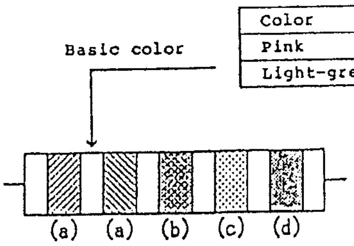
2-2. Capacitors

	Value	No indication .... μF P .... PF
	Dielectric resistance	No indication .... 50WV (All resistances other than 50WV and those of electrolytic capacitors are indicated with WV omitted.)
	Tolerances	No indication .... ±10% J .... ±5% M .... ±20% C .... ±0.25PF Z .... +80%/-20% (No indication with electrolytic capacitors (excluding tantalum and high stability electrolytic capacitors)
	Type	No indication .. Ceramic, general electrolytic (see circuit symbol to distinct from ceramic) MYL .... Mylar (Polyester film) STY .... Styrol TA .... Tantalum KU .... High stability electrolytic MP .... Metalized paper
Example C210 0.01/25 .... Mylar, 0.01μF, 25WV MYL.J ±5%		

3. How to Read Capacitance of Resistance-Type Capacitors and Coils

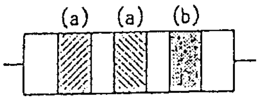
3-1 Capacitors

Color	Related voltage
Pink	25V
Light-green	50V



Color	Capacitance (a)	Multiplier (b)	Tolerance (c)	Characteristics (d)
Black	0	10^0	±20%	For temperature compensation
Brown	1	10^1		
Red	2	10^2		
Orange	3	10^3		
Yellow	4	10^4		
Green	5	10^5		
Blue	6	10^6		
Purple	7			
Gray	8		±30%	High permittivity type
White	9			For temperature compensation
Gold			±5%	
Silver			±10%	

3-2 Coils



4. Cautions on Use of MOS ICs

(1) MOS ICs are inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.
(2) High voltages may be applied during soldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
(3) The human body and clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so workers should be grounded.
(4) Be sure to ground measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

5. Measure the voltages at each section with the negative side of power supply as a reference.

The voltages in the camera section are measured with the VTR in the record mode, and those in the VTR section are measured in the record and playback modes.

- * Voltages in ( ) are in the record mode.
- * One voltage value is common for recording and playback.

LEADLESS COMPONENT IDENTIFICATION

1. Leadless Transistors

The leadless transistor number is indicated by a code on its surface, using one letter, one letter and one numeral, two letters, two letters and one numeral, two numerals, two numerals and one letter, or three letters.

Letter	Transistor Number	Letter	Transistor Number
A	2SB709	H	2SA1036K
A(R)	2SB1218R(AR)	I	2SB792
A(S)	2SB766S(AS)	J	2SC2735
A(J)	2SB1000J(AJ)	K	2SA1036
B	2SC1621	K(P)	2SC2413P(KP)
B(J)	2SB1001J(BJ)	L	2SC2462
B(R)	2SC4081R(BR)	M	2SA1052
B(R)	2SC2412AR(BR)	N	2SC1653
B(S)	2SC2412KS(BS)	N(E)	2SD1306E(NE)
C	2SA1122	P	2SD814
C(L)	2SD999L(CL)	P(E)	2SA1171E(PE)
C(R)	2SB710R(CR)	Q	2SC2620
C(R)	2SC4097R(CR)	Q(O)	2SC2714O(QO)
C(R)	2SC2411R(CR)	R	2SC2618
C(Q)	2SC2411KQ(CQ)	S	2SA1121
D	2SC2463	S(Q)	2SC3082KQ(SQ)
D(L)	2SB798L(DL)	U	2SC2404
E	2SA1022	W	2SD602
F	2SC2619	Y	2SD601
F(S)	2SA1037KS(FS)	Y(R)	2SD1819R(YR)
F(R)	2SA1576R(FR)	Z	2SD874
AA(S)	2SD1757KS(AAS)	DB(R)	2SD1766R(DBR)
BC(R)	2SB1188R(BCR)	IR(D)	2SA1484D(IRD)
BF(R)	2SB1308R(BFR)		
1D(T)	2SD1328T(1DT)	1C(R)	2SB902R(1CR)
B(3)	2SC1621(3)(B3)	L(6)	MMBC1623(6)(L6)
C(7)	2SA811(7)(C7)	L(6)	2SC1623(6)(L6)
L(7)	2SC2812(7)(L7)	F(2)	2SC1009(2)(F2)
M(6)	2SA812(6)(M6)	M(6)	2SA1179(6)(M6)
N(4)	2SC1653(4)(N4)		
D(16)	2SC1622A(16)(D16)	R(25)	2SC3356(25)(R25)
R(35)	2SC3583(35)(R35)	R(45)	2SC3585(45)(R45)
Y(25)	NTM3906(25)(Y25)		
1(D)	2SC3127D(1D)		
S1	FMS1	S2	FMS2
T1	IMT1	W1	FMW1
W2	FMW2	W3	FMW3
X1	IMX1	Y1	FMY1
Y3	FMY3	Z1	IMZ1
Z2	IMZ2		
4R	XN1C301	5H	XN4501
5K	XN4401		
Digital Transistor			
04	DTC114TK	06	DTC144TK
13	DTA143EK	15	DTA124K
15(s)	DTA124EU	16	DTA144EK
16(s)	DTA144EU	23	DTC143EK
24	DTC114EK	24(s)	DTC114EU
25	DTC124K	25(s)	DTC124EU
26	DTC144K	26(s)	DTC144EU
33	DTA143XK	43	DTC143XK
52	DTA123YK	64	DTC114YK
6B	UN5112	8B	UN5212
F52	DTB123	G21	DTD113ZK
H03	DTC343TK	H27	DTC363EK
R31	FP1L2Q		
A1	FMA1	A2	FMA2
B2	IMB2	C2	FMC2
D2	IMD2	G1	FMG1
G2	FMG2	G5	FMG5
H2	IMH2		
FET			
G	2SK302	J	2SK208
K	2SK160	W	2SK322
X	2SK157	X(4)	2SK94(4)(X4)
X(17)	2SK425(17)(X17)		
Y	2SK197	Z	2SK217
XA	2SK980		
3	2SK620	3(O)	2SK621(O)(3O)
1M	2SA1052	1F	2SK321
1K	2SK316	2B	2SK374

* "(s)" in the above table shows a component with smaller size.

* Codes on the digital transistors show only the transistor numbers.

(1) Identification for two letters.
Use this code and the following chart for component identification.

Example:

Code	Number
CD	2SA1122D
LD	2SC2462D

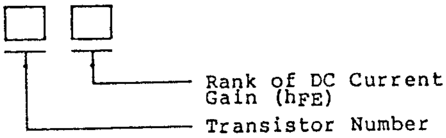


Fig.5-1 Leadless Transistor Code

(2) Identification for two types of one letter and one numeral.
Use this code and the following chart for component identification.

Letter	Transistor Number
L	2SC1623

Example:

Code	Number
L5	2SC1623(5)
L6	2SC1623(6)

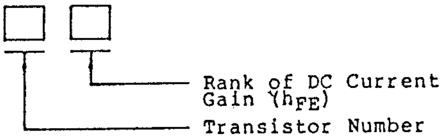
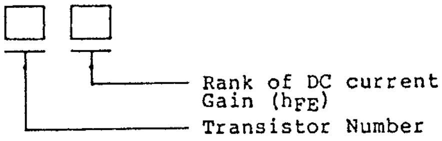


Fig.5-2 Leadless Transistor Code

Example:

Code	Number
1D	2SC3127D



Note: Codes S1, S2, T1, W1, W2, W3, X1, Y1, Y3, Z1 and Z2 show only the transistor numbers.

Fig.5-3 Leadless Transistor Code

(3) Identification for one numeral and two letters.
Use this code and the following chart for component identification.

Example:

Code	Number
1FQ	2SK321Q

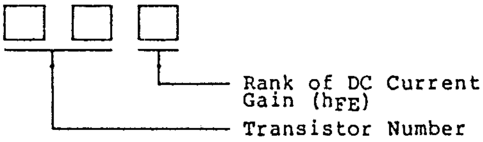


Fig.5-4 Leadless Transistor Code

(4) Identification for one letter and two numerals.
Use this coce and the following chart for component identification.

Example:

Code	Number
R25	2SC3356

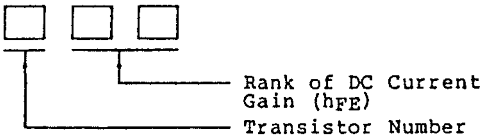


Fig. 5-5 Leadless Transistor Code

(5) Identification for two letters and one numeral.
Use this code and the following chart for component identification.

Example:

Code	Number
DV5	2SD596

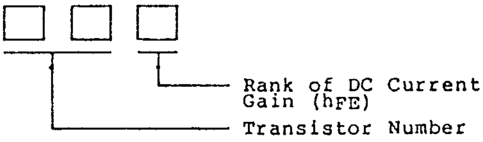


Fig. 5-6 Leadless Transistor Code

(6) Identification for three letters.
Use this code and the following chart for component identification.

Example:

Code	Number
AAS	2SD1757KS

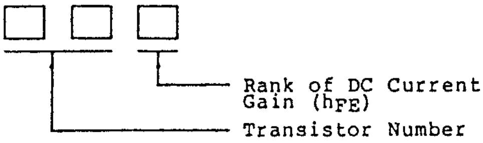


Fig. 5-7 Leadless Transistor Code

2. Leadless Diodes
Leadless diode numbers are indicated by a code on the surface, using one letter and one numeral, two letters, two letters and one numeral, two numerals, two numerals and one letter, or three numerals.
Use this code and the following chart for component identification.

Code	Diode Number	Code	Diode Number
BE	1SV172		
MC	MA153	MC(s)	MA143
MH	MA151K	MH(s)	MA141K
MN	MA151WA	MN(s)	MA141WA
MO	MA152WA		
MT	MA151WK	MT(s)	MA141WK
MU	MA152WK		
M1D	MA160	M1P	MA714
M2A	MA122	S1A	1SR143
N	DAN202K	Z	DA106K
A3	1S2835	A5	1S2837
C1	HSM88S	C2	HSM276S
1A	MA110		
3.0L	MA3030L	4.3L	MA3043L
4.7M	MA3047M	5.1M	MA3051M
5.1L	MA3051L	5.6M	MA3056M
6.2L	MA3062L	6.8M	MA3068
6.8M	MA3068M	7.5H	MA3075H
7.5L	MA3075L	8.2M	MA3082M
9.1M	MA3091	9.1M	MA3091M
10L	MA3100L	56M	MA3056M
75L	MA3075L	82M	MA3082M
91M	MA3091M		
20	HZM6-B	27	RD2.7M-B
30	RD3.0M-B	51	RD5.1M-B2
56	RD5.6M-B	91	RD9.1M-B
102	RD10M-B2	122	RD12M-B2
163	RD16M-B3	182	RD18M-B2
271	RD2.7M-B	272	RD2.7M-B2
301	RD3.0M-B	362	RD3.6M-B2
391	RD3.9M-B1	512	RD5.1M-B2
561	RD5.6M-B	621	RD6.2M-B1
681	RD6.8M-B	683	RD6.8M-B3
911	RD9.1M-B		

* "(s)" in the above table shows a component with smaller size.

3. Leadless Resistors
The resistor value is indicated on the surface of the component, using a three-digit numbers, or one letter and one numeral.

(1) Identification for three digit numbers.
Read this code following the same procedure as when reading the color code on discrete resistors.

Example:

Code	Value
330	$33 \times 10^0 = 33$ ohms
561	$56 \times 10^1 = 560$ ohms
123	$12 \times 10^3 =$ 12K ohms
1R2	$1 + 0.2 = 1.2$ ohms

(R: Decimal point)

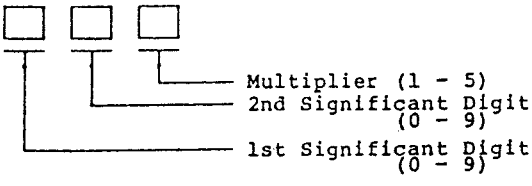


Fig. 5-8 Leadless Resistor Code

(2) Identification for one letter and one numeral.
Use this code and the following chart for component identification.

Letter	Value	Letter	Value	Letter	Value
A	1	J	2.2	S	4.7
C	1.2	L	2.7	U	5.6
E	1.5	N	3.3	W	6.8
G	1.8	Q	3.9	Y	8.2

Example:

Code	Value
A1	$1 \times 10^1 = 10$ ohms
G2	$1.8 \times 10^2 = 180$ ohms
L3	$2.7 \times 10^3 = 2700$ ohms
S4	$4.7 \times 10^4 = 47$K ohms
W5	$6.8 \times 10^5 = 680$K ohms

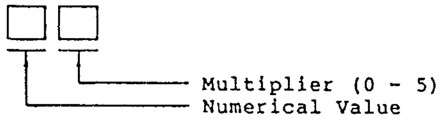
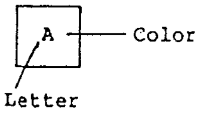


Fig. 5-9 Leadless Resistor Code

4. Leadless Capacitors

The capacitance value is indicated on the surface of the component, using body color and one letter, or one letter and one numeral.

(1) Identification for body color and one letter.

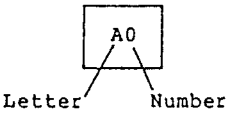


Body Color	Letter	Value	Body Color	Letter	Value
Red	A	1(PF)	Blue	A	100(PF)
	C	2		C	120
	E	3		E	150
	G	4		G	180
	J	5		J	220
	L	6		L	270
	N	7		N	330
	Q	8		Q	390
	S	9		S	470
				U	560
Black	A	10(PF)		W	680
	C	12		Y	820
	E	15			
	G	18	White	A	0.001(µF)
	J	22		E	0.0015
	L	27		J	0.0022
	N	33		L	0.0027
	Q	39		N	0.0033
	S	47		S	0.0047
	U	56		W	0.0068
	W	68			
	Y	82	Green	A	0.01(µF)
				E	0.015
				J	0.022
				N	0.033
				S	0.047
				U	0.056
				W	0.068
				Y	0.082
			Yellow	A	0.1(µF)

Example:

Color	Code	Value
Red	A	1PF
Black	A	10PF

(2) Identification for one letter and one numeral.



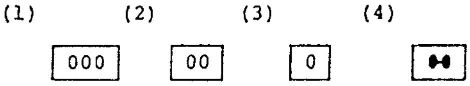
Letter /Number	Value	Letter /Number	Value
A0	1(PF)	A2	100(PF)
H0	2	C2	120
M0	3	E2	150
d0	4	G2	180
f0	5	J2	220
m0	6	L2	270
n0	7	N2	330
t0	8	Q2	390
y0	9	S2	470
		U2	560
A1	10(PF)	W2	680
C1	12	Y2	820
E1	15		
G1	18	A3	0.001(µF)
J1	22	E3	0.0015
L1	27	J3	0.0022
N1	33	N3	0.0033
Q1	39	S3	0.0047
S1	47	W3	0.0068
U1	56		
W1	68	A4	0.01(µF)
Y1	82	E4	0.015
		J4	0.022
		N4	0.033
		S4	0.047
		U4	0.056
		W4	0.068
		A5	0.1

Example:

Letter /Number	Value
A0	1PF
A1	10PF

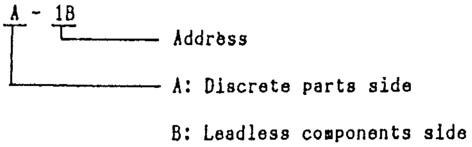
5. Leadless Jumper

The leadless jumper is indicated as shown below.



6. How to Read the Address of Leadless Components.

Address of leadless components



Kapitel 5 Schaltpläne une Leiterplatten-Diagramme

Verwendung dieses Wartungs-Referenzmaterials

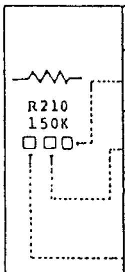
1. Markierungen in Schaltplänen und Leiterplatten-Diagrammen

(1) Teile mit der Markierung " ■ " nach der Schaltkreisnummer in den Schaltplänen und Leiterplatten-Diagrammen sind diskrete Teile.
(2) Teile mit der Markierung Ⓩ in den Leiterplatten-Diagrammen sind leiterlose Überbrückungen.

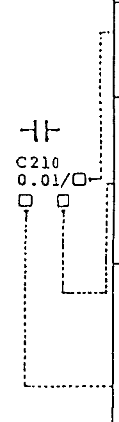
2. Ablesen der Abkürzungen

Werte, dielektrische Widerstände (Leistungskapazität), Toleranzen, Arten der Widerstände (ausgenommen Regelwiederstände usw.) und Kondensatoren sind in den Schaltplänen durch Abkürzungen bezeichnet. Diese Abkürzungen gemäß nachfolgenden Tabellen lesen, um die Teile richtig auszutauschen.

2-1. Wiederstände

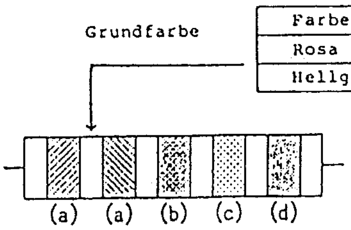
	Wert	Keine Angabe.............. Ohm K .... kOhm
	Toleranz	Keine Angabe .... ±5% K .... ±10% M .... ±20%
	Leistungs-kapazität	Keine Angabe .... 1/8W (Alle von 1/8W abweichenden Kapazitäten sind ohne W in den Schaltplänen aufgeführt.)
	Type	Keine Angabe ...... Kohlefilm, fest RC .... Kohle, massiv RW .... Drahtspule, massiv RS .... Metalloxydfilm, massiv RN .... Metallfilm, massiv
Beispiel R210 150K .... 150 kOhm, Kohle, massiv RC.1/2.K 1/2W, ±10%		

2-2. Kondensatoren

	Wert	Keine Angabe .... µF P .... PF
	Dielektrischer Widerstand	Keine Angabe .... 50WV (Alle von 50 WV abweichenden Widerstände und Elektrolytkondensatoren sind ohne WV angegeben.)
	Toleranz	Keine Angabe .... ±10% J .... ±5% M .... ±20% C .... ±0,25PF Z .... +80%/-20% (Keine Angabe für Elektrolytkondensatoren (ausgenommen Tantal- und hochstabile Elektrolytkondensatoren))
	Typ	Keine Angabe ...... Keramik, allgemeine Elektrolytkondensatoren (siehe Schaltkreissymbol für Unterscheidung von Keramik-Kondensatoren) MYL ..... Mylar (Polyesterfilm) STY ..... Styrol TA ...... Tantal KU ...... Hochstabiler Elektrolytkondensator MP ...... Metallisiertes Papier
Beispiel R210 0.01/25 .... Mylaer, 0,01µF, 25 WV MYL.J ±5%		

3. Ablesen der Kapazität von Wiederstand-Typ-Kondensatoren und Spulen

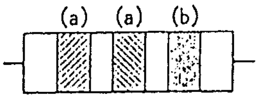
3-1 Kondensatoren



Farbe	Nennspannung
Rosa	25V
Hellgrün	50V

Farbe	Kapazität (a)	Multiplikator (b)	Toleranz (c)	Eigenschaften (d)
Schwarz	0	10^0	±20%	Für temperaturkompensation
Braun	1	10^1		
Rot	2	10^2		
Orange	3	10^3		
Gelb	4	10^4		
Grün	5	10^5		
Blau	6	10^6		
Violett	7			
Grau	8		±30%	Typ mit hoher Dielektrizitatskonstanter
Weiß	9			Für Temperaturkompensation
Gold			±5%	
Silber			±10%	Typ mit hoher Dielektrizitätzkonstanter

3-2 Spulen



4. Vorsichtsmaßnahmen bei der Vwewendung von MOS-ICs

(1) Der MOS-IC ist für den Versand in schwarzen Schaumstoff eingesetzt. Dieser Schaumstoff ist leitend und schließt die Leiter kurz, um Beschädigung zu vermeiden. Die ICs während der Lagerung nicht aus diesem Schaumstoff entfernen. Die ICs nicht aus diesem Schaumstoff entfernen, nicht auf Plastikleiten mit statischer Elektrizität ablegen und auch nicht in Styrol-Schaumstoff einsetzen.
(2) Während des Lötens kann es aufgrund von Streuungen an dem Lötkolben zu Hochspannung kommen; daher die Spitze des Lötkolbens erden oder einen Niederspannungs-Lötkolben verwenden.
(3) Der menschliche Körper, aus kunstfasern hergestellte Kleidungsstücke oder Nylon-Handschuhe können aufgrund von Reibung mit einer statischen Elektrizität von mehreren tausend Volt aufgeladen sein; daher sind die Arbeiter zu erden.
(4) Unbedingt die für Reparaturarbeiten verwendeten Meßinstrumente (Oszilloskop, Röhrenvoltmeter usw.) erden.

5. Die Spannungen an den einzelnen Abschnitten mit der negativen Seite der Stromversorgung als Referenzwert messen.

Die Spannungen in dem Kameraabschnitt werden bei auf den Aufnahmemodus geschaltetem Videorekorder gemessen, und die Spannungen in dem Videorekorderabschnitt werden in dem Aufnahme- und Wiedergabemodus gemessen.

- Spannungen in Klammern (   ) gelten für den Aufnahmemodus.
- Ein Spannungswert gilt gemeinsam für Aufnahme und Wiedergabe.

Identifikation leitungsfreier Komponenten

1. Leitungsfreie Transistoren

Die Nummer der leitungsfreien Transistoren ist mit einem Code an der Oberfläche angegeben. Dieser Code beteht aus einem Buchstaben, einem Buchstaben und einer Ziffer, zwei Buchstaben, zwei Buchstaben und einer Ziffer, zwei Ziffern, zwei Ziffern und einem Buchstaben oder drei Buchstaben.

Buchstabe	Transistor-Nummer	Buchstabe	Transistor-Nummer
A	2SB709	H	2SA1036K
A(R)	2SB1218R(AR)	I	2SB792
A(S)	2SB766S(AS)	J	2SC2735
A(J)	2SB1000J(AJ)	K	2SA1036
B	2SC1621	K(P)	2SC2413P(KP)
B(J)	2SB1001J(BJ)	L	2SC2462
B(R)	2SC4081R(BR)	M	2SA1052
B(R)	2SC2412AR(BR)	N	2SC1653
B(S)	2SC2412KS(BS)	N(E)	2SD1306E(NE)
C	2SA1122	P	2SD814
C(L)	2SD999L(CL)	P(E)	2SA1171E(PE)
C(R)	2SB710R(CR)	Q	2SC2620
C(R)	2SC4097R(CR)	Q(O)	2SC2714O(QO)
C(R)	2SC2411R(CR)	R	2SC2618
C(Q)	2SC2411KQ(CQ)	S	2SA1121
D	2SC2463	S(Q)	2SC3082KQ(SQ)
D(L)	2SB798L(DL)	U	2SC2404
E	2SA1022	W	2SD602
F	2SC2619	Y	2SD601
F(S)	2SA1037KS(FS)	Y(R)	2SD1819R(YR)
F(R)	2SA1576R(FR)	Z	2SD874
- -	- - - - -	- -	- - - -
AA(S)	2SD1757KS(AAS)	DB(R)	2SD1766R(DBR)
BC(R)	2SB1188R(BCR)	IR(D)	2SA1484D(IRD)
BF(R)	2SB1308R(BFR)		
- -	- - - - -	- -	- - - -
1D(T)	2SD1328T(1DT)	1C(R)	2SB902R(1CR)
- -	- - - - -	- -	- - - -
B(3)	2SC1621(3)(B3)	L(6)	MMBC1623(6)(L6)
C(7)	2SA811(7)(C7)	L(6)	2SC1623(6)(L6)
L(7)	2SC2812(7)(L7)	F(2)	2SC1009(2)(F2)
M(6)	2SA812(6)(M6)	M(6)	2SA1179(6)(M6)
N(4)	2SC1653(4)(N4)		
- -	- - - - -	- -	- - - -
D(16)	2SC1622A(16)(D16)	R(25)	2SC3356(25)(R25)
R(35)	2SC3583(35)(R35)	R(45)	2SC3585(45)(R45)
Y(25)	NTM3906(25)(Y25)		
- -	- - - - -	- -	- - - -
1(D)	2SC3127D(1D)		
- -	- - - - -	- -	- - - -
S1	FMS1	S2	FMS2
T1	IMT1	W1	FMW1
W2	FMW2	W3	FMW3
X1	IMX1	Y1	FMY1
Y3	FMY3	Z1	IMZ1
Z2	IMZ2		
- -	- - - - -	- -	- - - -
4R	XN1C301	5H	XN4501
5K	XN4401		
Digitaltransistor ----------			
04	DTC114TK	06	DTC144TK
13	DTA143EK	15	DTA124K
15(s)	DTA124EU	16	DTA144EK
16(s)	DTA144EU	23	DTC143EK
24	DTC114EK	24(s)	DTC114EU
25	DTC124K	25(s)	DTC124EU
26	DTC144K	26(s)	DTC144EU
33	DTA143XK	43	DTC143XK
52	DTA123YK	64	DTC114YK
- -	- - - - -	- -	- - - -
6B	UN5112	8B	UN5212
- -	- - - - -	- -	- - - -
F52	DTB123	G21	DTD113ZK
H03	DTC343TK	H27	DTC363EK
R31	FP1L2Q		
- -	- - - - -	- -	- - - -
A1	FMA1	A2	FMA2
B2	IMB2	C2	FMC2
D2	IMD2	G1	FMG1
G2	FMG2	G5	FMG5
H2	IMH2		
Feldeffekt-Transistor ----------			
G	2SK302	J	2SK208
K	2SK160	W	2SK322
X	2SK157	X(4)	2SK94(4)(X4)
X(17)	2SK425(17)(X17)		
Y	2SK197	Z	2SK217
- -	- - - - -	- -	- - - -
XA	2SK980		
- -	- - - - -	- -	- - - -
3	2SK620	3(O)	2SK621(O)(3O)
- -	- - - - -	- -	- - - -
1M	2SA1052	1F	2SK321
1K	2SK316	2B	2SK374

- * "(s)" in der obigen Tabelle zeigt ein Teil mit kleinerer Größe.
- * Code der Digitaltransistoren zeigen nur die Transistor-Nummer.

(1) Identifikation für zwei Buchstaben. Diesen Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Beispiel:

Code	Nummer
CD	2SA1122D
LD	2SC2462D

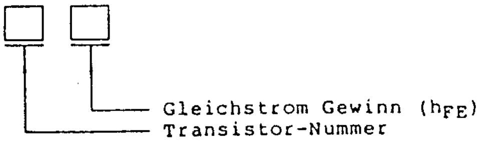


Abb. 5-1 Leitungsfreier Transistor-Code

(2) Identifikation von zwei Typen mit einem Buchstaben und einer Ziffer. Diesen Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Buchstabe	Transistor-Nummer
L	2SC1623

Beispiel:

Code	Nummer
L5	2SC1623(5)
L6	2SC1623(6)

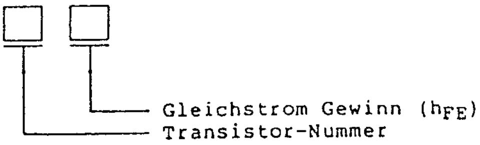
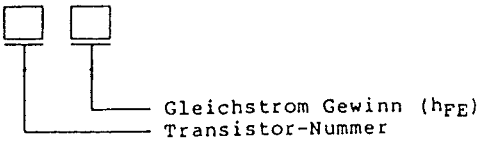


Abb. 5-2 Leitungsfreier Transistor-Code

Beispiel:

Code	Nummer
1D	2SC3127D



Hinweis:
Codes S1, S2, T1, W1, W2, W3, X1, Y1, Y3, Z1 und Z2 zeigen nur die Transistor-Nummer.

Abb. 5-3 Leitungsfreier Transistor-Code

(3) Identifikation mit einer Ziffer und zwei Buchstaben.

Diesen Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Beispiel:

Code	Nummer
1FQ	2SK321Q

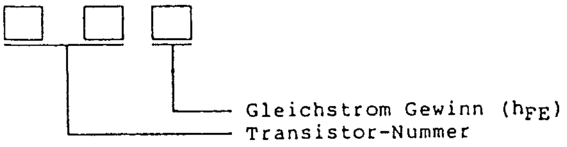


Abb. 5-4 Leitungsfreier Transistor-Code

(4) Identifikation mit einem Buchstaben und zwei Zifferen.

Diese Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Beispiel:

Code	Nummer
R25	2SC3356

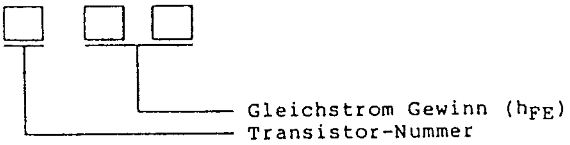


Abb. 5-5 Leitungsfreier Transistor-Code

(5) Identifikation mit zwei Buchstaben und einer Ziffer.

Diese Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Beispiel:

Code	Nummer
DV5	2SD596

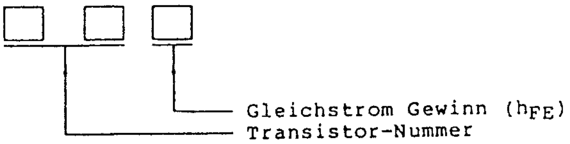


Abb. 5-6 Leitungsfreier Transistor-Code

(6) Identifikation mit drei Buchstaben

Diesen Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Beispiel:

Code	Nummer
AAS	2SD1757KS

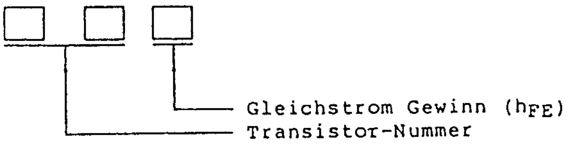


Abb. 5-7 Leitungsfreier Transistor-Code

2. Leitungsfreie Dioden

Die Nummern leitungsfreier Dioden sind durch einen Code an der Oberfläche angegeben, der aus einem Buchstaben, einem Buchstaben und einer Ziffer, zwei Buchstaben, zwei Buchstaben und einer Ziffer, zwei Ziffern, zwei Ziffern und einem Buchstaben oder drei Ziffern besteht. Diesen Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Code	Dioden-Nummer	Code	Dioden-Nummer
BE	1SV172		
MC	MA153	MC(s)	MA143
MH	MA151K	MH(s)	MA141K
MN	MA151WA	MN(s)	MA141WA
MO	MA152WA		
MT	MA151WK	MT(s)	MA141WK
MU	MA152WK		
M1D	MA160	M1P	MA714
M2A	MA122	S1A	1SR143
N	DAN202K	$\underline{\text{Z}}$	DA106K
A3	1S2835	$\overline{\text{A}}$5	1S2837
C1	HSM88S	C2	HSM276S
1A	MA110		
3.0L	MA3030L	4.3L	MA3043L
4.7M	MA3047M	5.1M	MA3051M
5.1L	MA3051L	5.6M	MA3056M
6.2L	MA3062L	6.8M	MA3068
6.8M	MA3068M	7.5H	MA3075H
7.5L	MA3075L	8.2M	MA3082M
9.1M	MA3091	9.1M	MA3091M
10L	MA3100L	56M	MA3056M
75L	MA3075L	82M	MA3082M
91M	MA3091M		
20	HZM6-B	27	RD2.7M-B
30	RD3.0M-B	51	RD5.1M-B2
56	RD5.6M-B	91	RD9.1M-B
102	RD10M-B2	122	RD12M-B2
163	RD16M-B3	182	RD18M-B2
271	RD2.7M-B	272	RD2.7M-B2
301	RD3.0M-B	362	RD3.6M-B2
391	RD3.9M-B1	512	RD5.1M-B2
561	RD5.6M-B	621	RD6.2M-B1
681	RD6.8M-B	683	RD6.8M-B3
911	RD9.1M-B		

* "(s)" in der obigen Tabelle zeigt ein Teil mit kleinerer Größe.

3. Leitungsfreie Widerstände

Der Widerstandswert ist auf der Oberfläche der Komponente mit einer dreistelligen Zahl oder einem Buchstaben und einer Ziffer angegeben.

(1) Identifikation mit dreistelliger Zahl.

Diesen Code gleich wie den Code eines diskreten Widerstandes ablesen.

Beispiel:

Code	Wert
330	33×10^0 = 33 Ohm
561	56×10^1 = 560 Ohm
123	12×10^3 = 12K Ohm
1R2	$1 \times 0{,}2$ = 1,2 Ohm

(R: Dezimalpunkt)

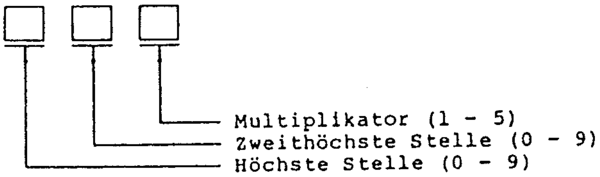


Abb. 5-8 Code der leitungsfreien Widerstände

(2) Identifikation mit einem Buchstaben und einer Ziffer

Diesen Code und die folgende Tabelle für die Identifikation der Komponenten verwenden.

Buchstabe	Wert	Buchstabe	Wert
A	1	N	3,3
C	1,2	Q	3,9
E	1,5	S	4,7
G	1,8	U	5,6
J	2,2	W	6,8
L	2,7	Y	8,2

Beispiel:

Code	Wert
A1	$1 \times 10^{1} = 10$ Ohm
G2	$1{,}8 \times 10^{2} = 180$ Ohm
L3	$2{,}7 \times 10^{3} = 2700.$ Ohm
S4	$4{,}7 \times 10^{4} = 47$K Ohm
W5	$6{,}8 \times 10^{5} = 680$K Ohm

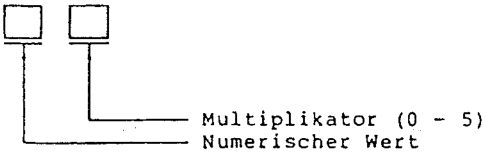
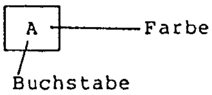


Abb. 5-9 Code der leitungsfreien Widerstände

4. Leitungsfreie Kondensatoren

Die Kapazität ist auf der Oberfläche der Komponente mit Hilfe der Gehäusefarbe und einem Buchstaben oder einem Buchstaben und einer Ziffer angegeben.

(1) Identifikation mit Gehäusefarbe und einem Buchstaben

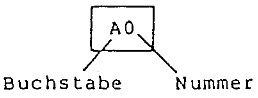


Gehäusefarbe	Buchstabe	Wert	Gehäusefarbe	Buchstabe	Wert
Rot	A	1(PF)	Blau	A	100(PF)
	C	2		C	120
	E	3		E	150
	G	4		G	180
	J	5		J	220
	L	6		L	270
	N	7		N	330
	Q	8		Q	390
	S	9		S	470
				U	560
Schwarz	A	10(PF)		W	680
	C	12		Y	820
	E	15			
	G	18	Weiß	A	0,001(µF)
	J	22		E	0,0015
	L	27		J	0,0022
	N	33		L	0,0027
	Q	39		N	0,0033
	S	47		S	0,0047
	U	56		W	0,0068
	W	68			
	Y	82	Grün	A	0,01(µF)
				E	0,015
				J	0,022
				N	0,033
				S	0,047
				U	0,056
				W	0,068
				Y	0,082
			Gelb	A	0,1(µF)

Beispiel:

Farbe	Code	Wert
Rot	A	1PF
Schwarz	A	10PF

(2) Identifikation mit einem Buchstaben und einer Ziffer



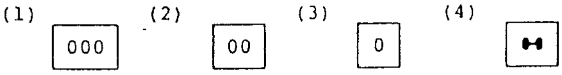
Buchstabe/ Nummer	Wert	Buchstabe/ Nummer	Wert
A0	1(PF)	A2	100(PF)
H0	2	C2	120
M0	3	E2	150
d0	4	G2	180
f0	5	J2	220
m0	6	L2	270
n0	7	N2	330
t0	8	Q2	390
y0	9	S2	470
		U2	560
A1	10(PF)	W2	680
C1	12	Y2	820
E1	15		
G1	18	A3	0,001(µF)
J1	22	E3	0,0015
L1	27	J3	0,0022
N1	33	N3	0,0033
Q1	39	S3	0,0047
S1	47	W3	0,0068
U1	56		
W1	68	A4	0,01 (µF)
Y1	82	E4	0,015
		J4	0,022
		N4	0,033
		S4	0,047
		U4	0,056
		W4	0,068
		A5	0,1

Beispiel:

Buchstabe/Nummer	Wert
A0	1PF
A1	10PF

5. Leitungsfreie Überbrückung

Leitungsfreie Überbrückungen sind wie folgt dargestellt.



CHAPITRE 5 SCHEMAS DE MONTAGE ET DE CABLAGE

QUAND CETTE DOCUMENTATION EST UTILISEE COMME MOYEN DE REFERENCE PENDANT LE DEPANNAGE

1. Repérage dans les schémas de montage et de câblage

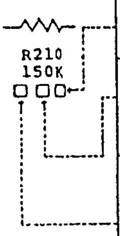
(1) Les composants identifiés par les guillemets " ■ " et qui accompagnent les numéros de circuit des schémas de montage et de câblage sont des composants discrets.

(2) Les composants identifiés par les repères Ⓩ des schémas de câblage sont des couplages sans composants.

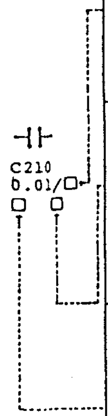
2. Procéder d'interprétation des abréviations

Les valeurs, les résistances diélectriques (capacitanes de puissance), les tolérances, les catégories de résistances (à l'exclusion des résistances variables, etc.) et les condensateurs sont identifiés dans les schémas de montage à l'aide des abréviations suivantes. Comparer ces abréviations avec les indications des tableaux qui suivent pour pouvoir les interpréter correctement au moment d'effectuer leur remplacement.

2-1. Resistors

	Valeur	Sans indication .... ohm K .... kohm
	Tolérance	Sans indication .... ±5% K .... ±10% M .... ±20%
	Capacité de puissance	Sans indication .... 1/8W (Toutes les capacités autres que 1/8W sont identifiées dans les schémas de montage sans la lettre W)
	Type	Sans indication .. Couche de carbone RC .... Carbone dur RW .... Enroulement dur type alimentation RS .... Couche métaloxyde dure RN .... couche métallique dure
Exemple R210 150K RC.1/2.K		150 kohms à carbone dur 1/2W, ±10%

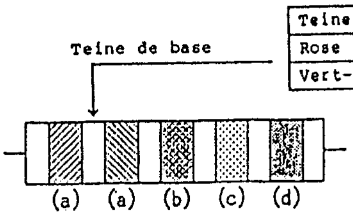
2-2. Condensateurs

	Valeur	Sans indication .... µF P .... pF
	Résistance diélectrique	Sans indication .... 50WV (Toutes les capacités autres que de 50WV et celles des condensateurs électrolituques sont identifiées dans les schémas de montage sans les lettres WV)
	Tolérance	Sans indication ...... ±10% J .... ±5% M .... ±20% C .... ±0,25PF Z .... +80%/-20% (Sans indication avec les condensateurs électrolytiques à l'exclusion des condensateurs au tantale et des condensateurs électrolytiques à haute stabilité)
	Type	Sans indication .... Céramique, en général électrolytique (voir le symbole de circuit pour faire la distinction avec céramique) MYL ...... Mylar (couche de polyester) STY ..... Styrol TA ...... Tantale KU ...... Electrolytiques à haute stabilité MP ...... Papier métallisé
Exemple R210 0.01/25 .... MYL.J		Mylar, 0,01µF, 25 WV ±5%

3. Comment interpréter un condensateur de type à résistance et bobinage

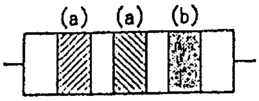
3-1 Condensateur

Teine	Tension nominale
Rose	25V
Vert-clair	50V



Teinte	Capacité (a)	Multiplicateur (b)	Tolérance (c)	Caractèristiques (d)
Noire	0	10^0	±20%	A des fins de compensation de température
Brune	1	10^1		
Rouge	2	10^2		
Orange	3	10^3		
Jaune	4	10^4		
Vert	5	10^5		
Bleu	6	10^6		
Violet	7			
Gris	8		±30%	Type à haute constante diélectrique
Blanc	9			A des fins de compensation de température
Or			±5%	
Argent			±10%	Type à haute constante diélectrique

3-2 Bobinages



4. Mesures de précaution à prendre pendant la manipulation des circuits intégrès MOS

(1) Les circuits intégres MOS sont placés dans du plastique noir expansé à des fins de transport. Ce plastique expansé est conducteur et permet ainsi de court-circuiter les fils de connexion pour empêcher la détèrioration du circuit. Il ne faut donc jamais retirer les circuits intégrés de leur plastique noir expansé ni les poser, par exemple, sur une feuille de matière plastique ordinaire car celle-ci a tendance à se charger d'électricité statique, ni même de les placer sur de la mousse de styrol.

(2) De très hautes tensions risquent d'être appliquées pendant les opérations de soudage par suite de fuites de courant électrique ayant pour origine le fer à souder, c'est la raison pour laquelle il est indispensable de mettre la pointe du fer à souder à la terre ou d'utiliser un fer à souder basse tension.

(3) Par ailleurs, il faut retenir que les vêtements en fibres synthétiques ou les gants en nylon peuvent se charger de plusieurs milliers de volts d'électricité statique par friction, c'est la raison pour laquelle les dépanneurs doivent être reliés à la terre.

(4) Mettre les instruments de mesure à la terre tels que les oscilloscopes, les voltmètres électroniques à affichage numérique, etc., qui sont utilisés pendant le dépannage.

5. Mesurer les tensions de chaque section en prenant le négatif de l'alimentation comme moyen de référence.

Les tensions de la section caméra sont mesurées en réglant le magnétoscope en mode d'enregistrement et celles de la section magnétoscope sont mesurées pendant les modes de lecture et d'enregistrement.

* Les tensions indiquées entre parenthèses (   ) se rapportent au mode d'enregistrement.
* Une valeur de tension est commune aux modes d'enregistrement et de lecture.

IDENTIFICATION DES COMPOSANTS SANS CONDUCTEUR

1. Transistor sans conducteur

Le numéro de transistor sans conducteur est indiqué sous la forme d'un code à sa surface et emploie une lettre, une lettre et un chiffre, deux lettres, deux lettres et un chiffre, deux chiffres, deux chiffres et une lettre, ou trois lettres.

Lettre	Numéro de transistor	Lettre	Numéro de transistor
A	2SB709	H	2SA1036K
A(R)	2SB1218R(AR)	I	2SB792
A(S)	2SB766S(AS)	J	2SC2735
A(J)	2SB1000J(AJ)	K	2SA1036
B	2SC1621	K(P)	2SC2413P(KP)
B(J)	2SB1001J(BJ)	L	2SC2462
B(R)	2SC4081R(BR)	M	2SA1052
B(R)	2SC2412AR(BR)	N	2SC1653
B(S)	2SC2412KS(BS)	N(E)	2SD1306E(NE)
C	2SA1122	P	2SD814
C(L)	2SD999L(CL)	P(E)	2SA1171E(PE)
C(R)	2SB710R(CR)	Q	2SC2620
C(R)	2SC4097R(CR)	Q(O)	2SC2714O(QO)
C(R)	2SC2411R(CR)	R	2SC2618
C(Q)	2SC2411KQ(CQ)	S	2SA1121
D	2SC2463	S(Q)	2SC3082KQ(SQ)
D(L)	2SB798L(DL)	U	2SC2404
E	2SA1022	W	2SD602
F	2SC2619	Y	2SD601
F(S)	2SA1037KS(FS)	Y(R)	2SD1819R(YR)
F(R)	2SA1576R(FR)	Z	2SD874
AA(S)	2SD1757KS(AAS)	DB(R)	2SD1766R(DBR)
BC(R)	2SB1188R(BCR)	IR(D)	2SA1484D(IRD)
BF(R)	2SB1308R(BFR)		
1D(T)	2SD1328T(1DT)	1C(R)	2SB902R(1CR)
B(3)	2SC1621(3)(B3)	L(6)	MMBC1623(6)(L6)
C(7)	2SA811(7)(C7)	L(6)	2SC1623(6)(L6)
L(7)	2SC2812(7)(L7)	F(2)	2SC1009(2)(F2)
M(6)	2SA812(6)(M6)	M(6)	2SA1179(6)(M6)
N(4)	2SC1653(4)(N4)		
D(16)	2SC1622A(16)(D16)	R(25)	2SC3356(25)(R25)
R(35)	2SC3583(35)(R35)	R(45)	2SC3585(45)(R45)
Y(25)	NTM3906(25)(Y25)		
1(D)	2SC3127D(1D)		
S1	FMS1	S2	FMS2
T1	IMT1	W1	FMW1
W2	FMW2	W3	FMW3
X1	IMX1	Y1	FMY1
Y3	FMY3	Z1	IMZ1
Z2	IMZ2		
4R	XN1C301	5H	XN4501
5K	XN4401		
Transistor numérique			
04	DTC114TK	06	DTC144TK
13	DTA143EK	15	DTA124K
15(s)	DTA124EU	16.	DTA144EK
16(s)	DTA144EU	23	DTC143EK
24	DTC114EK	24(s)	DTC114EU
25	DTC124K	25(s)	DTC124EU
26	DTC144K	26(s)	DTC144EU
33	DTA143XK	43	DTC143XK
52	DTA123YK	64	DTC114YK
6B	UN5112	8B	UN5212
F52	DTB123	G21	DTD113ZK
H03	DTC343TK	H27	DTC363EK
R31	FP1L2Q		
A1	FMA1	A2	FMA2
B2	IMB2	C2	FMC2
D2	IMD2	G1	FMG1
G2	FMG2	G5	FMG5
H2	IMH2		
Transistor à effet de champ			
G	2SK302	J	2SK208
K	2SK160	W	2SK322
X	2SK157	X(4)	2SK94(4)(X4)
X(17)	2SK425(17)(X17)		
Y	2SK197	Z	2SK217
XA	2SK980		
3	2SK620	3(O)	2SK621(O)(3O)
1M	2SA1052	1F	2SK321
1K	2SK316	2B	2SK374

* "(s)" dans le tableau ci-dessus indique qu'il s'agit d'un composant sous-dimensionné.

* Les codes des transistors numériques n'indiquent que les numéros de transistor.

(1) Identification à l'aide de deux lettres.

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Exemple:

Code	Numéro
CD	2SA1122D
LD	2SC2462D

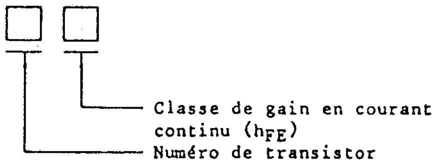


Fig. 5-1 Code de transistor sans conducteur

(2) Identification de deux sortes de code à une lettre et un chiffre.

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Lettre	Numéro de transistor
L	2SC1623

Exemple:

Code	Numéro
L5	2SC1623 (5)
L6	2SC1623 (6)

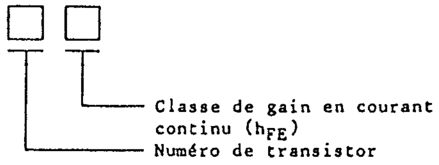
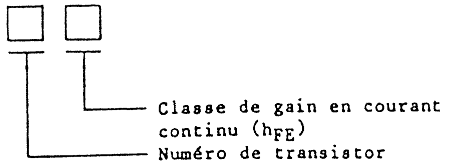


Fig. 5-2 Code de transistor sans conducteur

Exemple:

Code	Numéro
1D	2SC3127D



Remarque:

Les codes S1, S2, T1, W1, W2, W3, X1, Y1, Y3, Z1 et Z2 n'indiquent que les numéros de transistor.

Fig. 5-3 Code de transistor sans conducteur

(3) Identification à l'aide d'un chiffre et deux lettres.

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Exemple:

Code	Numéro
1FQ	2SK321Q

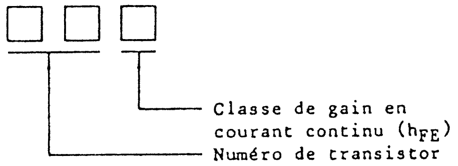


Fig. 5-4 Code de transistor sans conducteur

(4) Identification à l'aide d'une lettre et de deux chiffres.

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Exemple:

Code	Numéro
R25	2SC3356

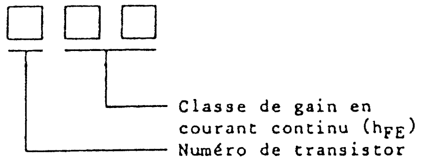


Fig. 5-5 Code de transistor sans conducteur

(5) Identification à l'aide de deux lettres et un chiffre.

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Exemple:

Code	Numéro
DV5	2SD596

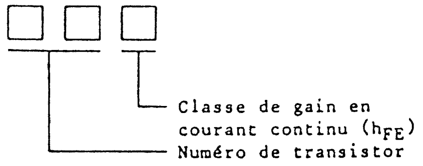


Fig. 5-6 Code de transistor sans conducteur

(6) Identification à l'aide de trois lettres

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Exemple:

Code	Numéro
AAS	2SD1757KS

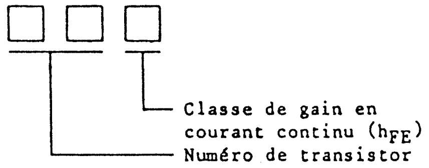


Fig. 5-7 Code de transistor sans conducteur

2. Diodes sans conducteur

Le numéro de diode sans conducteur est indiqué sous la forme d'un code à sa surface et emploie une lettre, une lettre et un chiffre, deux lettres, deux lettres et un chiffre, deux chiffres, deux chiffres et un lettre, ou trois chiffres. Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Code	Numéro de diode	Code	Numéro de diode
BE	1SV172		
MC	MA153	MC(s)	MA143
MH	MA151K	MH(s)	MA141K
MN	MA151WA	MN(s)	MA141WA
MO	MA152WA		
MT	MA151WK	MT(s)	MA141WK
MU	MA152WK		
M1D	MA160	M1P	MA714
M2A	MA122	S1A	1SR143
N	DAN202K	Z	DA106K
A3	1S2835	A5	1S2837
C1	HSM88S	C2	HSM276S
1A	MA110		
3.0L	MA3030L	4.3L	MA3043L
4.7M	MA3047M	5.1M	MA3051M
5.1L	MA3051L	5.6M	MA3056M
6.2L	MA3062L	6.8M	MA3068
6.8M	MA3068M	7.5H	MA3075H
7.5L	MA3075L	8.2M	MA3082M
9.1M	MA3091	9.1M	MA3091M
10L	MA3100L	56M	MA3056M
75L	MA3075L	82M	MA3082M
91M	MA3091M		
20	HZM6-B	27	RD2.7M-B
30	RD3.0M-B	51	RD5.1M-B2
56	RD5.6M-B	91	RD9.1M-B
102	RD10M-B2	122	RD12M-B2
163	RD16M-B3	182	RD18M-B2
271	RD2.7M-B	272	RD2.7M-B2
301	RD3.0M-B	362	RD3.6M-B2
391	RD3.9M-B1	512	RD5.1M-B2
561	RD5.6M-B	621	RD6.2M-B1
681	RD6.8M-B	683	RD6.8M-B3
911	RD9.1M-B		

* "(s)" dans le tableau ci-dessus indique qu'il s'agit d'un composant sous-dimensionné.

3. Résistances sans conducteur

La valeur de résistance est indiquée à la surface du composant à l'aide d'un numéro à trois chiffres ou d'une lettre puis d'un chiffre.

(1) Identification à l'aide de nombres à trois chiffres.

Interpréter ce code suivant le même principe que pour interpréter le code de couleur des résistances discrètes.

Exemple:

Code	Valeur
330	$30 \times 10^0 = 30$ ohms
561	$56 \times 10^1 = 560$ ohms
123	$12 \times 10^3 = 12$ Kohms
1R2	$1 + 0.2 = 1.2$ ohms (R: virgule décimale)

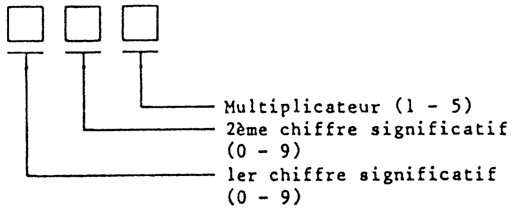

Multiplicateur (1 - 5)
2ème chiffre significatif (0 - 9)
1er chiffre significatif (0 - 9)

Fig. 5-8 Code de résistance sans conducteur

(2) Identification à l'aide d'une lettre et d'un chiffre.

Utiliser ce code tout en consultant le tableau qui suit pour identifier les composants.

Lettre	Valeur	Lettre	Valeur
A	1	N	3,3
C	1,2	Q	3,9
E	1,5	S	4,7
G	1,8	U	5,6
J	2,2	W	6,8
L	2,7	Y	8,2

Exemple:

Code	Valeur
A1	$1 \times 10^1 = 10$ ohms
G2	$1.8 \times 10^2 = 180$ ohms
L3	$2.7 \times 10^3 = 2700$ ohms
S4	$4.7 \times 10^4 = 47$K ohms
W5	$6.8 \times 10^5 = 680$ K ohms

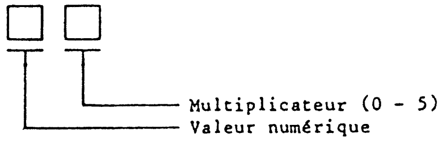
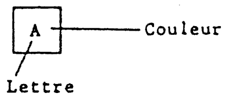


Fig. 5-9 Code de résistance sans conducteur

4. Code de condensateurs sans conducteur

La valeur capacitive est indiquée à la surface du composant à l'aide de la couleur du boîtier et d'une lettre puis d'une lettre et d'un chiffre.

(1) Identification à l'aide de la couleur du boîtier et d'une lettre

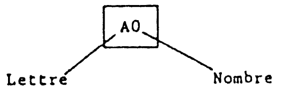


Couleur du boîtier	Lettre	Valeur	Couleur du boîtier	Lettre	Valeur
Rouge	A	1 (PF)	Bleu	A	100 (PF)
	C	2		C	120
	E	3		E	150
	G	4		G	180
	J	5		J	220
	L	6		L	270
	N	7		N	330
	Q	8		Q	390
	S	9		S	470
Noir	A	10 (PF)		U	560
	C	12		W	680
	E	15		Y	820
	G	18	Blanc	A	0.001 (µF)
	J	22		E	0.0015
	L	27		J	0.0022
	N	33		L	0.0027
	Q	39		N	0.0033
	S	47		S	0.0047
	U	56		W	0.0068
	W	68	Vert	A	0.01 (µF)
	Y	82		E	0.015
				J	0.022
				N	0.033
				S	0.047
				U	0.056
				W	0.068
				Y	0.082
			Jaune	A	0.01 (µF)

Exemple:

Couleur	Code	Valeur
Rouge	A	1pF
Noir	A	10pF

(2) Identification à l'aide d'une lettre de l'alphabet et d'un nombre



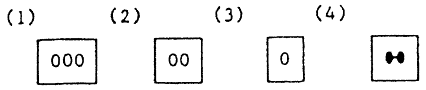
Lettre/Nombre	Valeur	Lettre/Nombre	Valeur
A0	1 (PF)	A2	100 (PF)
H0	2	C2	120
M0	3	E2	150
d0	4	G2	180
f0	5	J2	220
m0	6	L2	270
n0	7	N2	330
t0	8	Q2	390
y0	9	S2	470
A1	10 (PF)	U2	560
C1	12	W2	680
E1	15	Y2	820
G1	18	A3	0,001 (µF)
J1	22	E3	0,0015
L1	27	J3	0,0022
N1	33	N3	0,0033
Q1	39	S3	0,0047
S1	47	W3	0,0068
U1	56	A4	0,01 (µF)
W1	68	E4	0,015
Y1	82	J4	0,022
		N4	0,033
		S4	0,047
		U4	0,056
		W4	0,068
		A5	0,1

Exemple:

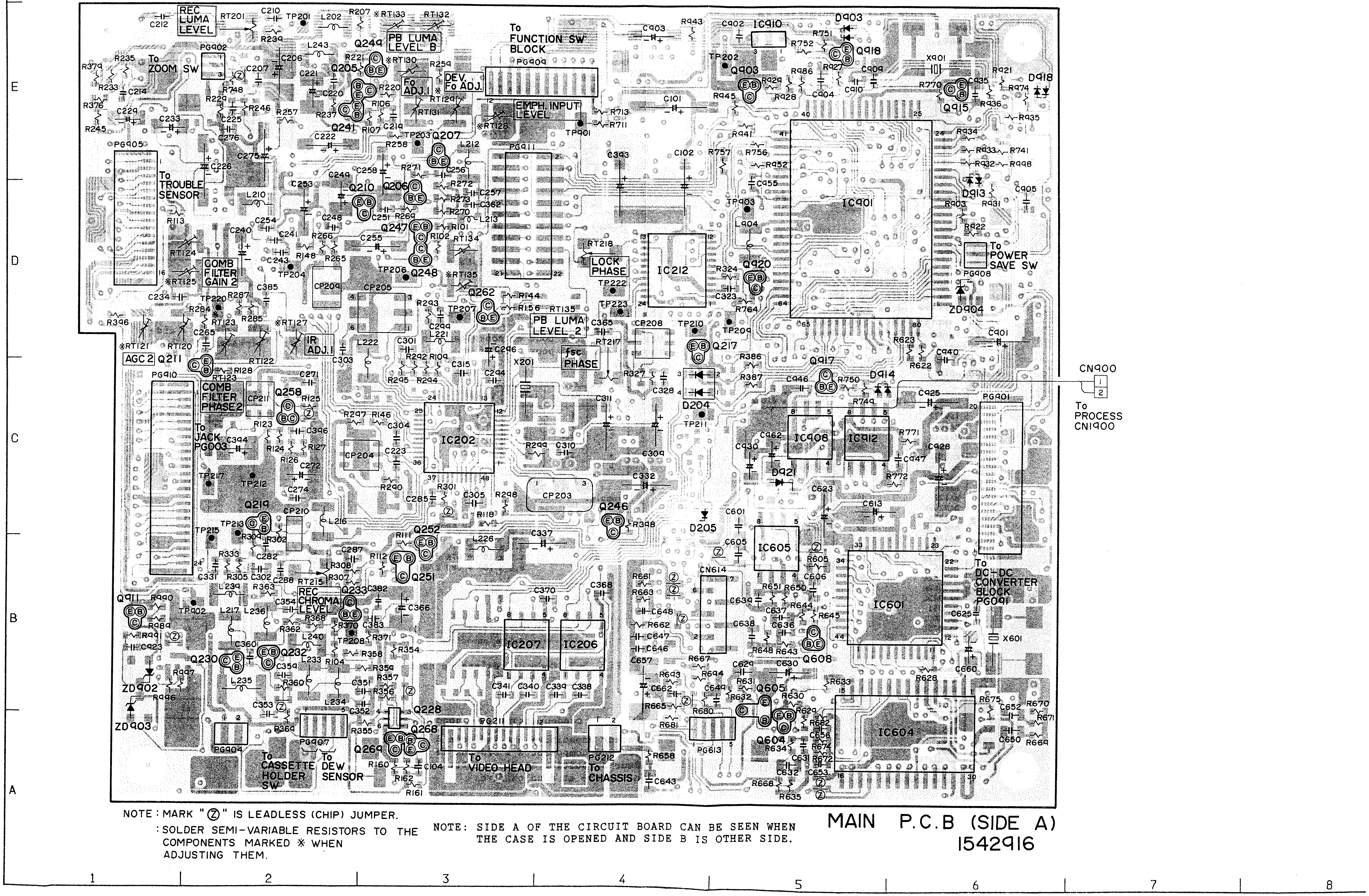
Lettre/Nombre	Valeur
A0	1pF
A1	10pF

5. Couplage sans fil

Le couplage sans fil est identifié comme représenté ci-dessous.



VM-E8E/VM-E10E
MAIN CIRCUIT BOARD (SIDE A)

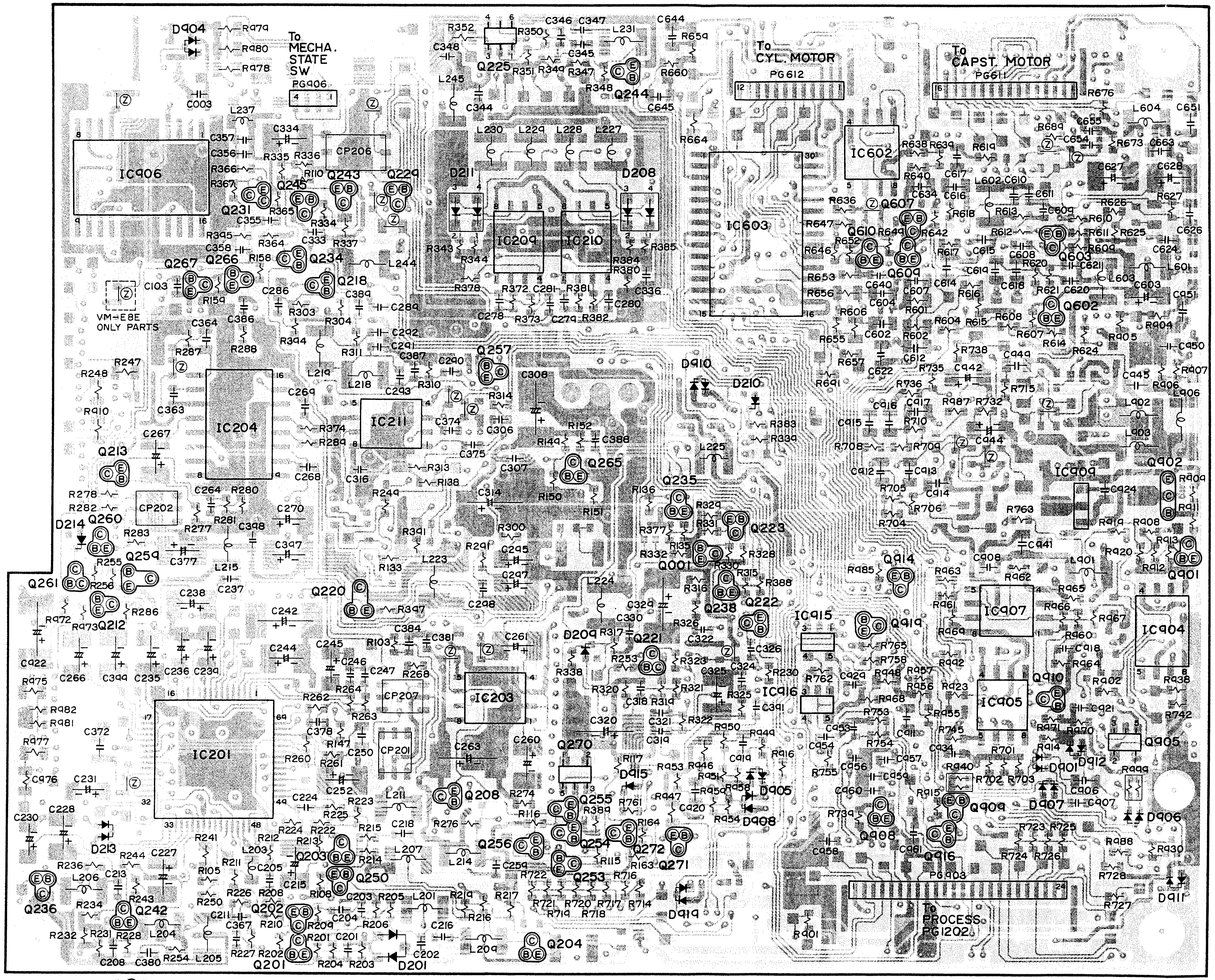

REC LUMA LEVEL
PB LUMA LEVEL B
To FUNCTION SW BLOCK
To ZOOM SW
Fo ADJ.1
DEV. Fo ADJ.
EMPH. INPUT LEVEL
To TROUBLE SENSOR
COMB FILTER GAIN 2
LOCK PHASE
PB LUMA LEVEL 2
fsc PHASE
IR ADJ.1
AGC 2
COMB FILTER PHASE 2
To JACK PG003
REC CHROMA LEVEL
To POWER SAVE SW
To PROCESS CN1900
CN900
To DC-DC CONVERTER BLOCK PG091
To CASSETTE HOLDER SW
To DEW SENSOR
To VIDEO HEAD
To CHASSIS
IC910
IC901
IC212
IC202
IC908
IC912
IC605
IC601
IC207
IC206
IC604
CP203
CP204
CP205
CP209
CP210
CP211
CN614
PG902
PG905
PG909
PG910
PG911
PG901
PG904
PG907
PG211
PG212
PG613
PG908
X201
X901
X601
E
D
C
B
A
1
2
3
4
5
6
7
8

NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.
:SOLDER SEMI-VARIABLE RESISTORS TO THE COMPONENTS MARKED ※ WHEN ADJUSTING THEM.

NOTE: SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN THE CASE IS OPENED AND SIDE B IS OTHER SIDE.

MAIN P.C.B (SIDE A)
1542916

VM-E8E/VM-E10E
MAIN CIRCUIT BOARD (SIDE B)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PG612
To CAPST. MOTOR
PG611
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PG903
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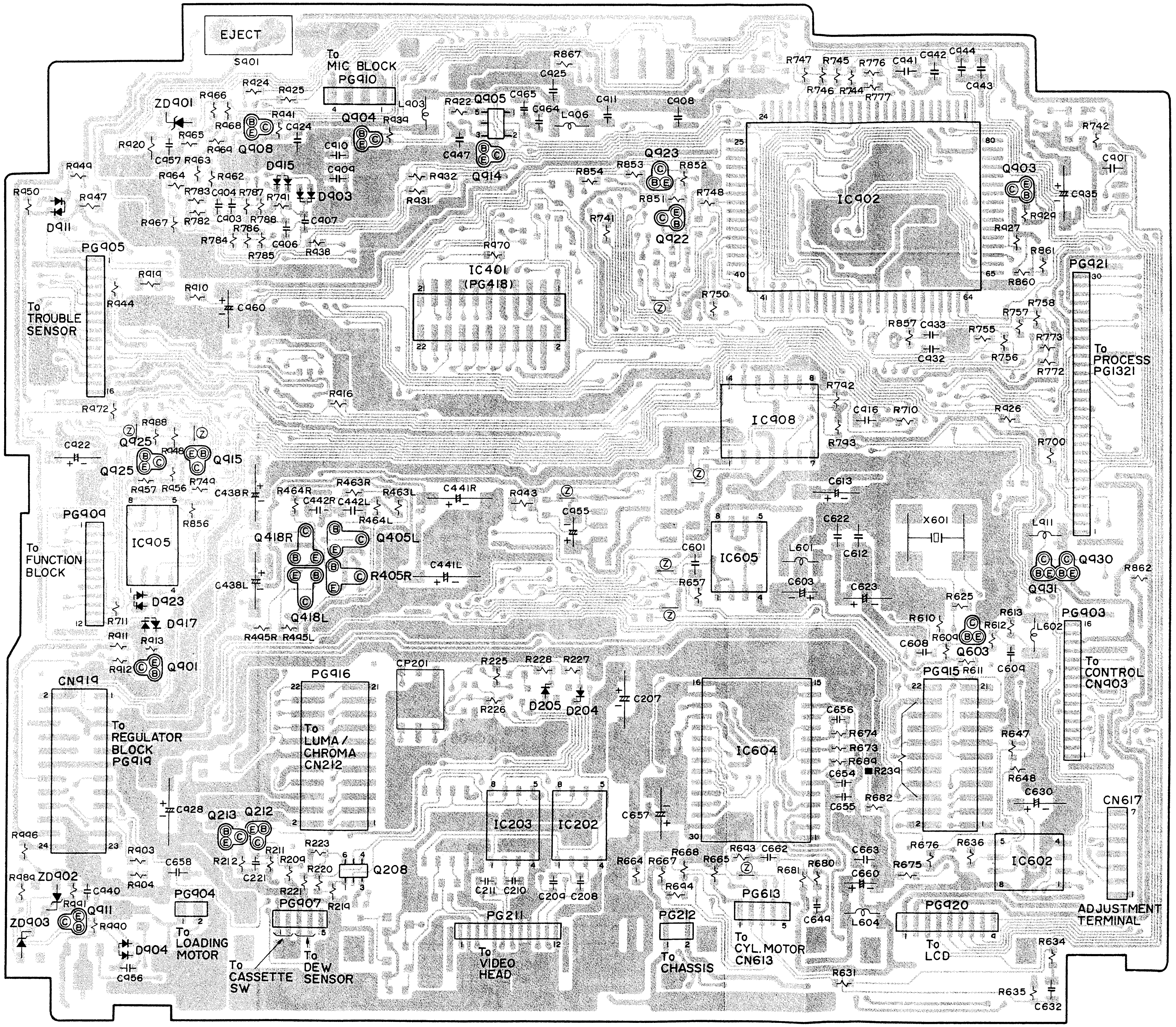
NOTE : MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

NOTE: SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN THE CASE IS OPENED AND SIDE B IS OTHER SIDE.

MAIN P.C.B (SIDE B)
1542916

VM-E15E/VM-E16E
MAIN CIRCUIT BOARD (SIDE A)


EJECT
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Q904
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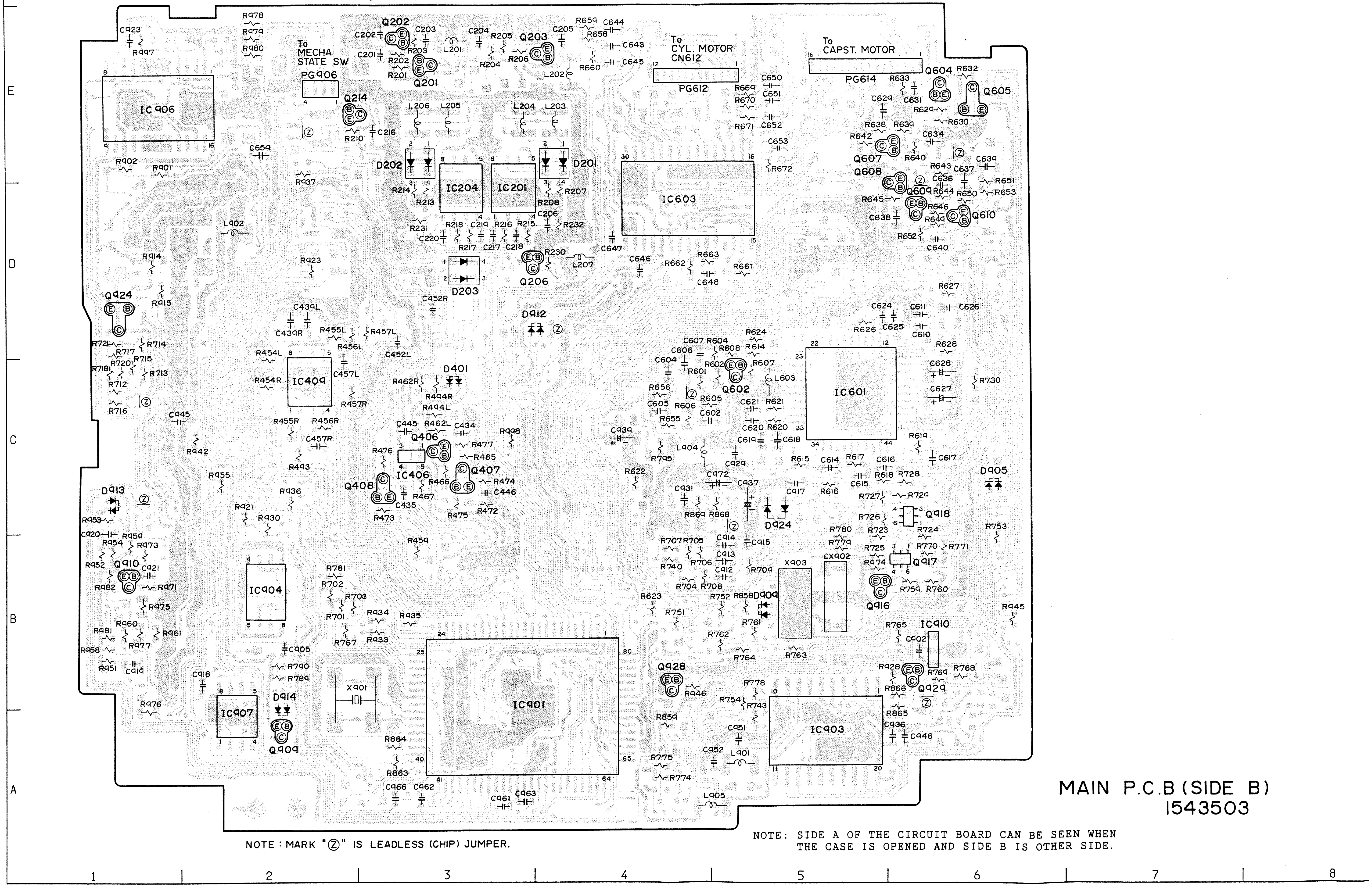
NOTE : MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

NOTE: SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN
THE CASE IS OPENED AND SIDE B IS OTHER SIDE.

MAIN P.C.B (SIDE A)
1543503

VM-E15E/VM-E16E
MAIN CIRCUIT BOARD (SIDE B)


To MECHA STATE SW
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PG612
To CAPST. MOTOR
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NOTE : MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

MAIN P.C.B (SIDE B)
1543503

NOTE: SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN
THE CASE IS OPENED AND SIDE B IS OTHER SIDE.

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VM-E8E,E(AU)
VM-E10E,E(UK),E(GR)
VM-E15E,E(UK)
VM-E16E,E(AU)

TK No.3688E,G,F Video Systems Operation

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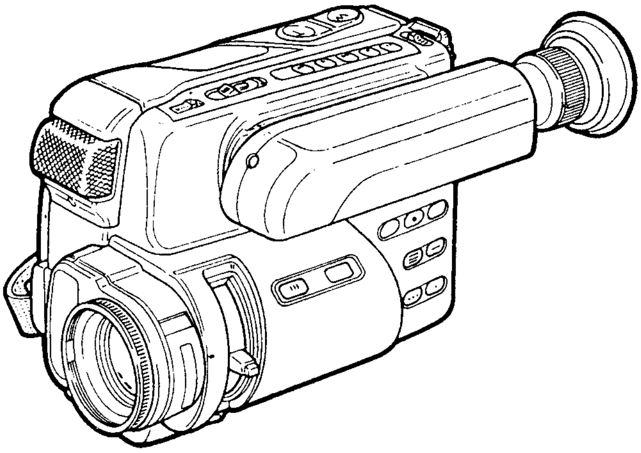
HITACHI
SERVICE MANUAL

TK

No. 3424E

VM-E10E,E(UK),E(GR)



Technical Data

MANUAL RELATED TO THE VM-E10E

TITLE	MODEL	MANUAL NO.
Technical Information	VM-E10E	No. 3425E
RF UNIT	VM-RF85E	No. ——
POWER ADAPTER /CHARGER	VM-AC80E	No. 3327E,G

8

SPECIFICATIONS

General	
Power requirements	6V DC
Power consumption	6.5 watts (When FOCUS switch is "MANUAL".)
Operating temperature	0°C to 40°C
Operating humidity	<80%
Storage temperature	−20°C to 50°C
Dimensions	111(W) x 106(H) x 176(D) mm
Weight	Approx. 0.8 kg (without battery pack and cassette)
Video Recorder Section	
Format	8mm
Record/playback system	Two video record/playback heads
Video signal	PAL colour & CCIR monochrome signals 625 lines
Tape speed	SP: 20.05 mm/sec. LP: 10.06 mm/sec. (Playback only)
Video output	1.0 Vp-p, 75 ohm
Audio output	−8 dBs, less than 1K ohm
Headphone output	−26 dBs, (8 ohms terminal)
Fast forward/rewind time	Less than 10 minutes with P5-90 cassette
Camera Section	
Scanning	625 lines/50 fields/25 frames
Required minimum illumination	4 lux
Camera device	1/2" C.C.D
Lens diameter	34 mm

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers'. Critical parts are marked with ⚠ in the schematic diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safety operate without danger of electrical shock.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

8mm VIDEO CAMERA/RECORDER

January **1991** TOKAI WORKS

This service manual includes the diagrams of the process sections with and without program AE and the audio sections of both monaural and stereo models.
Use the diagrams, referring to the tables below.

MODEL	SCHEMATIC	CIRCUIT BOARD	FUNCTION
VM-E10E	ENCODER	PROCESS	WITH PROGRAM AE
	SUB SYSTEM CONTROL		
	JACK	JACK	STEREO
	SYSTEM CONTROL	MAIN (SAME AS MONAURAL MODEL)	

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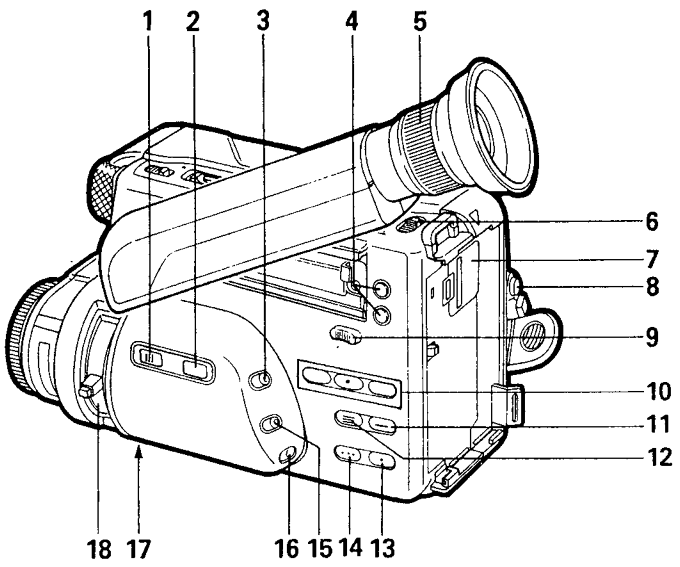
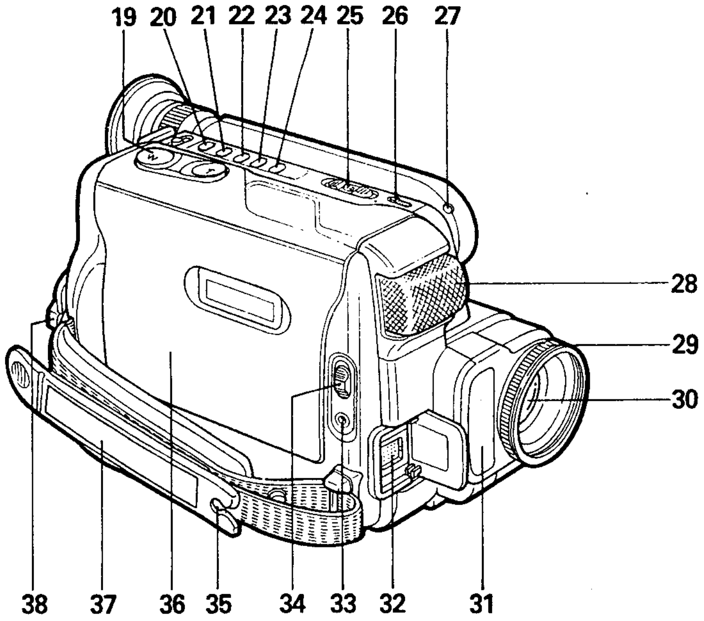
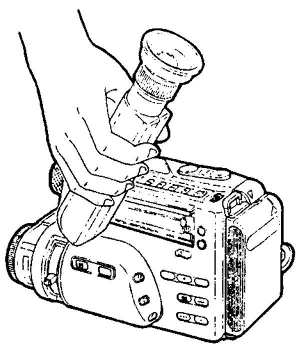




1. **SHUTTER Button**
   Used to control the shutter speed during recording and/or record/pause (stand-by) mode.
2. **BLC Button**
   When the subject is lit from behind, press and hold this button to compensate for the back-lighting.
3. **FADE Button**
   During recording you can add a professional touch to your recordings by fading in and out of scenes.
   NOTE: When you use FADE button to fade in and out, the sound will also fade in and out with the picture.
4. **DATE/TIME Set Buttons**
   These buttons are used to set the clock (time and date) in your camera/recorder so it can be recorded on your tapes for future reference.
5. **Diopter Control**
   To use the electronic viewfinder without eyeglasses on, turn this control for your optimum focus adjustment.
6. **BATTERY Release Lever**
   Releases the battery, AC adapter/charger or battery housing attached to the camera/recorder.
7. **Clock Battery Compartment**
   Pull the tab to open the cover and install the clock battery (provided).
8. **REC START/STOP Button**
   This button is used to control the camera/recorder. When this button is pressed with the camera/recorder set to the recording mode, the tape runs to start recording.
   When this button is pressed again, the tape stops and the camera/recorder enters the record/pause (stand-by) mode.
9. **EVF RELEASE Button**
   Press and hold this button to set the EVF (Electronic Viewfinder) back to its original position after use. This button has no effect when the viewfinder is being pulled out.
10. **TITLE Buttons**
    Use these buttons to store a title in memory or recall the stored title and record it superimposed on the picture being shot.
11. **TIME LAPSE/SELF TIMER Button**
    This button is used when performing self-timer, time lapse and one-shot recording.
12. **AV DUB Button**
    This button is used to record new audio and video in place of existing audio and video.
13. **C.RESET Button**
    When the linear time counter is displayed in the viewfinder, pressing the button resets the counter to "0:00:00".
14. **DISPLAY Button**
    Pressing this button once causes a 5 digit linear time counter and battery indicator to appear in the camera/recorders viewfinder. Pressing the button again will cause the battery indicator and linear time counter with memory to appear. Pressing a 3rd time will cause battery indicator and amount of time remaining on the cassette to appear.
    Press a 4th time to delete all displays.
15. **DATE/TIME Button**
    Press this button to display the date and clock in the viewfinder. Whenever the date and clock appear in the viewfinder, they will be recorded on the tape.
16. **REVIEW Button**
    Used to review the last few seconds of the recorded segment in the record/pause mode.
17. **FOCUS Switch**
    Set this switch to the "AUTO" position for automatic focusing, and to the "MANUAL" position for focusing with the focus ring.
    Auto focusing can also be performed during the manual focus mode by pressing and moving this switch to the left.
18. **Zoom Ring (Manual Zooming)**
    Use to control the zoom setting. For a given camera-subject distance, the subject will appear 6X larger at the tele position than at the wide position. Just rotate the zoom ring for a tele angle (T) or wide angle (W) picture. Macro close-up, as close as 1 cm from object, is feasible.
19. **Power Zoom Switch**
    This switch performs zooming electrically.
    "W": Picture becomes wider gradually.
    "T": Picture becomes telescopic gradually.
20. **PAUSE Button**
    When this button is pressed in the playback mode, the tape stops and you can view a still picture.
    When this button is pressed again, the tape runs to resume playback.
21. **STOP Button**
    The STOP button is used to stop playback, rewind, and fast forward operations. The STOP button has no effect during record operation.
22. **F.FWD Button**
    Press this button during stop or rewind mode, and fast-forwarding starts. "FAST FWD" indication appears in the viewfinder whenever the linear time counter or time remaining is present. Press the button during playback of tape, and the tape is played back in the forward direction approximately 7 times faster than the normal speed to confirm the recorded content. Press PLAY button to return to normal playback mode or press STOP button to stop tape movement.
    NOTE: You can also visually scan forward when the camera/recorder is record/pause (stand-by) mode by pressing and holding this button.
23. **PLAY Button**
    Used for playback of tape.
    NOTE: When the camera/recorder is record/pause (stand-by) mode, pressing and holding this button will play the tape at normal.

24. **REW Button**
    Press this button during stop or fast forward mode, and fast-rewinding starts. "REWIND" indication appears in the viewfinder whenever the linear time counter or time remaining is present. Press the button during playback of tape, and the tape is played back in the rewind direction approximately 5 times faster than the normal speed to confirm the recorded contents. Press PLAY button to return to normal playback mode or press STOP button to stop tape movement.
    NOTE: You can also visually scan backward when the camera/recorder is record/pause (stand-by) mode by pressing and holding this button.
25. **OPERATE Switch**
    This turns the camera/recorder on and off and also switches between the camera and VTR modes.
    Set the switch to "CAM" to turn the camera's power on and to "VTR" to turn the VTR's power.
    Press and hold the small red button in the switch to switch it.
26. **EJECT Switch**
    Operates with OPERATE either on or off, if a power source is connected to the camera/recorder.
27. **Record Indicator**
    Flashes for about 10 seconds when the TIME LAPSE/SELF TIMER button is pressed during record/pause (stand-by) mode and stays on to indicate recording starts.
28. **Stereo Microphone**
    Sensitive to sounds coming from the direction in which the camera is pointed.
29. **Focus Ring**
    Do not attempt to manually turn the focus ring when the camera/recorder is in the auto focus mode.
30. **Lens**
    F1.8 (9 ~ 54 mm) 6X power zoom lens features with auto focus and auto iris functions.
31. **Auto Focus Window**
    To automatically focus the camera lens, this window transmits and receives infrared light which is reflected off the subject. Make sure you don't obstruct this window when recording.
32. **AV OUT Jack**
    Use the AV stereo output cord (Accessory No. 1) or RF output adapter (Optional Accessory) to connect this jack to a TV to view the pictures played back by the camera/recorder.
33. **PHONES Jack**
    Sound being recorded by the microphone or played back may be monitored by attaching headphone (Not supplied) to this jack.
34. **MIC NORMAL/WIND Switch**
    This switch is used to reduce noise that occurs due to wind. Place the switch in the "NORMAL" position for normal use.
35. **Lens Cap Tab**
    Place the lens cap on this tab when you are ready to record a scene. The tab also prevents the lens cap from swinging around on its cord.
36. **Cassette Holder**
    Slide EJECT switch to open the cassette holder. Be aware of the cassette direction when inserting.
    NOTE: Power source must be connected to open the cassette holder.
37. **Hand Strap**
    Adjust to best fit to your hand.
38. **Power Save Lever**
    When the OPERATE switch is set to "CAM", this lever turns the camera's power on and off. This is convenient during camera recording because it is not necessary to set the OPERATE switch to "OFF" when you want to turn camera's power off and then on again.

CAUTION:
Do not hold the unit by the electronic viewfinder when carrying as this could cause a malfunction.



CHAPTER 2
DISASSEMBLY

Note: Before starting removal, be sure to set the camera/recorder to eject. Otherwise, the right case cannot be removed. Remove the lens hood and set the focus ring to infinity (∞); otherwise, the sensor circuit board and lens block cannot be removed.

1. SEPARATING THE CAMERA SECTION AND VCR SECTION

1-1. ELECTRONIC VIEWFINDER (EVF)

1) Move the EVF in the direction of arrow (A). (See Fig. 2-1)
2) Turn the EVF in the direction of arrow (B).
3) Remove one (1) screw and remove the EVF shoe in the direction of arrow (A).
4) Disconnect connector CN801. (See Fig. 2-2)

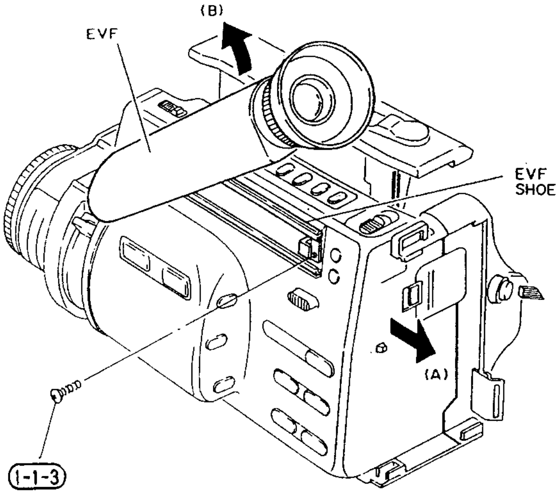

(B)
EVF
EVF SHOE
(A)
1-1-3

Fig. 2-1

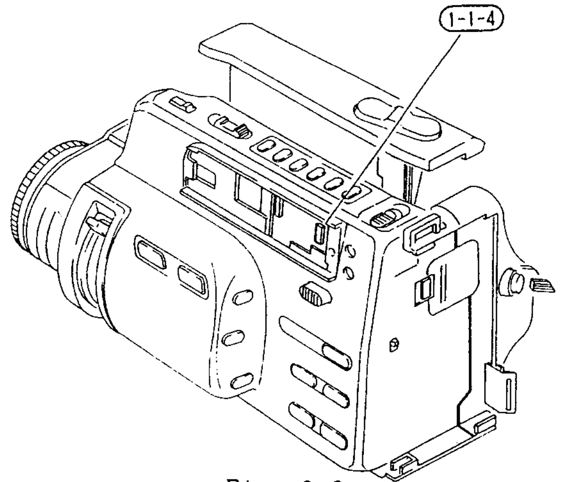


Fig. 2-2

1-2. Cassette Lid, Microphone (MIC)

(1) Cassette Lid

1) Release two (2) tabs and remove the cassette lid in the direction of arrow (A). (See Fig. 2-3)

(2) Microphone (MIC)

1) Remove one (1) screw holding the MIC. (See Fig. 2-3)
2) Remove the MIC in the direction of arrow (B) and disconnect connector CN001 on the jack circuit board.

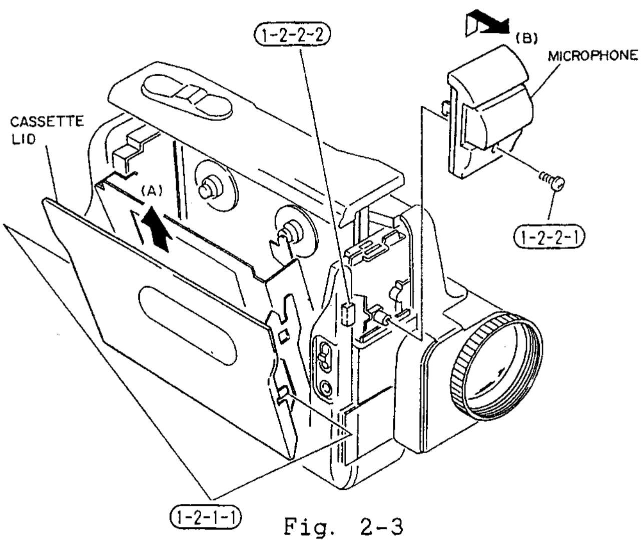

1-2-2-2
(B)
MICROPHONE
CASSETTE LID
(A)
1-2-2-1
1-2-1-1

Fig. 2-3

1-3. Separating the Camera Section and VCR Section

ORDER FOR REMOVING PARTS	*ITEM No.*
· Microphone	1-2

1) Remove six (6) screws holding the camera section and VCR section. (See Fig. 2-4)
2) Disconnect four (4) connectors (CN093, CN903, CN051, CN001) on the DC-DC converter, process circuit board, fuse circuit board. (See Fig. 2-5)

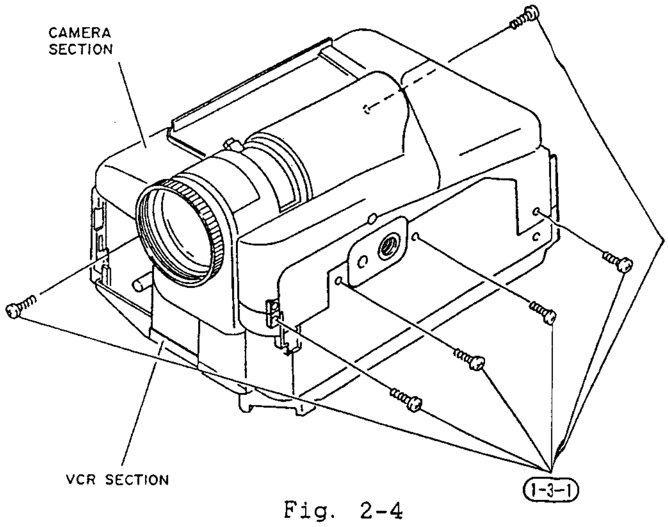

CAMERA SECTION
VCR SECTION
1-3-1

Fig. 2-4

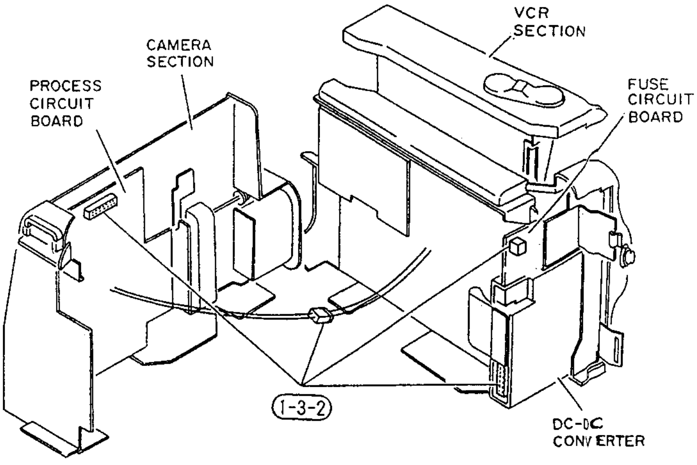

VCR SECTION
CAMERA SECTION
PROCESS CIRCUIT BOARD
FUSE CIRCUIT BOARD
1-3-2
DC-DC CONVERTER

Fig. 2-5

2. CAMERA SECTION (LEFT CASE SIDE) REMOVAL

ORDER FOR REMOVING PARTS	*ITEM No.*
· EVF	1-1
· Separating the Camera Section and VCR Section	1-3

2-1. Process Circuit Board, Sensor Circuit Board, Lens Block, Control Switch, Left Case

(1) Process Circuit Board

1) Remove one (1) screw holding the tripod mount. (See Fig. 2-6)
2) Disconnect three (3) flat cables (CN1203, CN1204, CN1207) on the process circuit board.
3) Remove two (2) screws holding the process circuit board.
4) Remove one (1) screw holding the process circuit board and control switch holder.
5) Release one (1) tab and remove the process circuit board in the direction of arrow (A) separating from the sensor circuit board. (The process and sensor circuit boards are connected via board-in type connector.)
6) Unsolder one (1) lead wire on the process circuit board (between the process and sensor circuit boards). (See Fig. 2-7)

(2) Sensor Circuit Board, Lens Block

Note: Remove the lens hood first and set the focus ring to infinity (∞) end.

7) Set the zoom lever (zoom ring) to telephoto end position.
8) Remove three (3) screws and remove the lens block from the left case in the direction of arrow (B). (See Fig. 2-6)
9) Remove two (2) screws holding the sensor circuit board.

(3) Control Switch, Left Case

10) Remove four (4) screws and remove the control switch from the left case. (See Fig. 2-6)

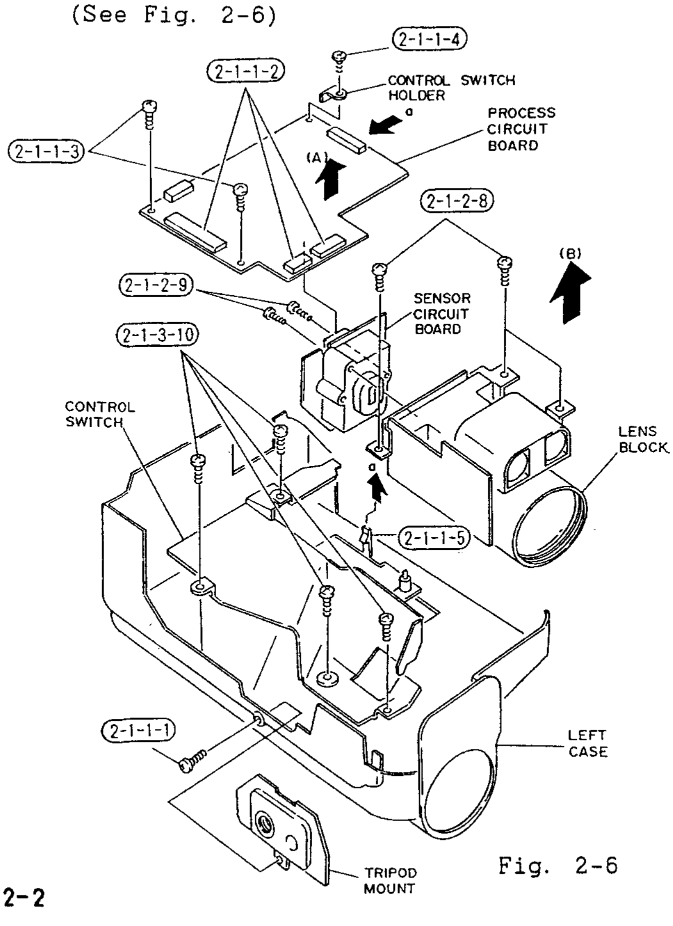


Fig. 2-6

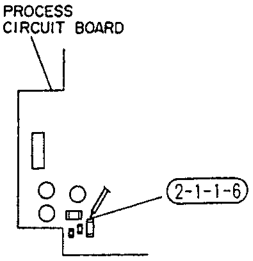


Fig. 2-7

3. VCR SECTION (RIGHT CASE SIDE) REMOVAL

Note: Set the unit to the eject state. Apply DC 3V to pin 1 of PG904 (CN904) on the main circuit board to set the unit to the eject state with the camera section removed (use PG904 pin 2 as ground).

3-1. Right Case, VCR Block

ORDER FOR REMOVING PARTS	*ITEM No.*
· Cassette Lid	1-2

1) Remove three (3) screws holding the right case. (See Fig. 2-8)
2) Remove the right case in the direction of arrow (B) while pushing the cassette holder in the direction of arrow (A).

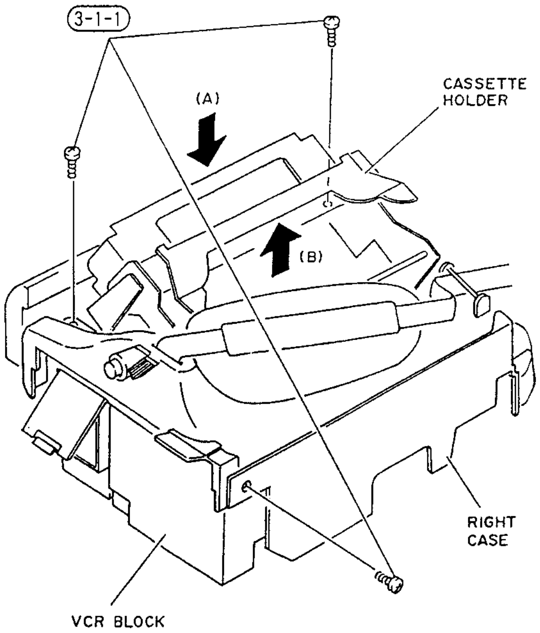


Fig. 2-8

3-2. Main Circuit Board

1) Release one (1) tab and remove the audio IC (IC401) in the direction of arrow (A). (The IC401 and main circuit board are connected via board-in type connector.) (See Fig. 2-9)
2) Disconnect connector CN091 on the DC-DC converter.
3) Disconnect eight (8) flat cables (CN211, CN613, CN902, CN905, CN907, CN908, CN909, CN910) on the main circuit board.
4) Disconnect two (2) connectors (CN212, CN904) on the main circuit board.

5) Release two (2) tabs and open the main circuit board in the direction of arrow (B).
6) Disconnect three (3) flat cables (CN612, CN611, CN905) on the main circuit board. (See Fig. 2-10)

Note: Adjust as follows after installing the main circuit board.
- CHAPTER 4
  3-6. SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT SECTION

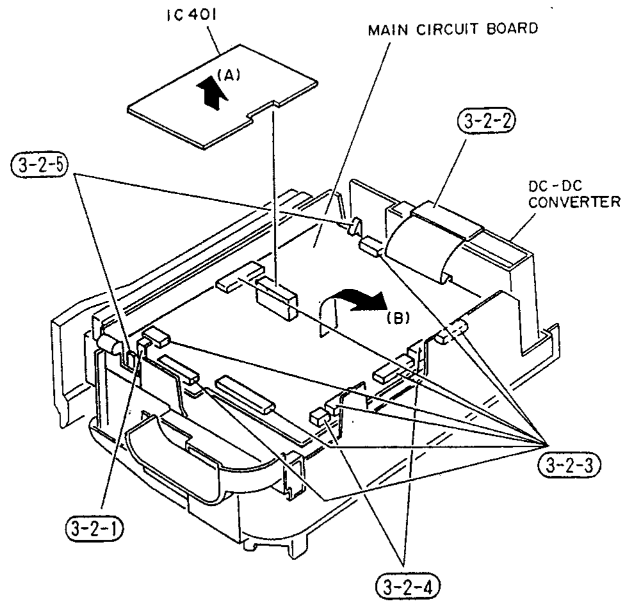

IC401
MAIN CIRCUIT BOARD
(A)
3-2-2
3-2-5
DC-DC CONVERTER
(B)
3-2-3
3-2-1
3-2-4

Fig. 2-9

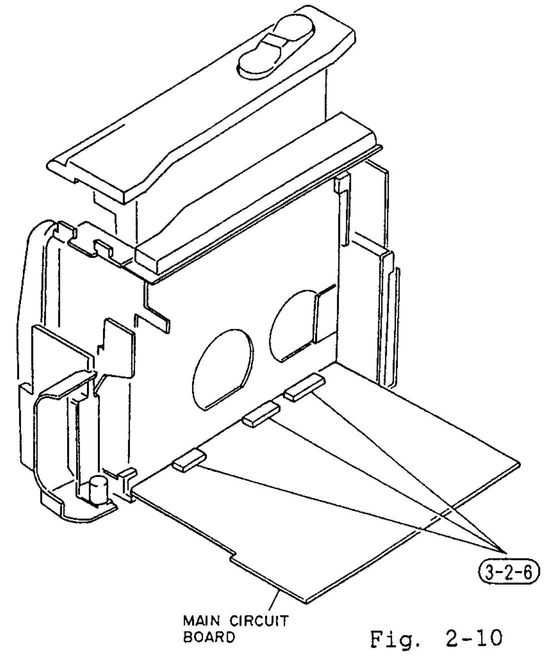

3-2-6
MAIN CIRCUIT BOARD

Fig. 2-10

3-3. Function Switch, Jack Circuit Board

ORDER FOR REMOVING PARTS	*ITEM No.*
· Right Case	3-1

(1) Function Switch
1) Remove the IC401. (See Fig. 2-9)
2) Disconnect one (1) flat cable (CN909) on the main circuit board. (See Fig. 2-11)
3) Remove one (1) screw and remove the function switch in the direction of arrow (A).

(2) Jack Circuit Board
4) Disconnect one (1) flat cable (CN910) on the main circuit board. (See Fig. 2-11)
5) Remove the jack circuit board in the direction of arrow (B).

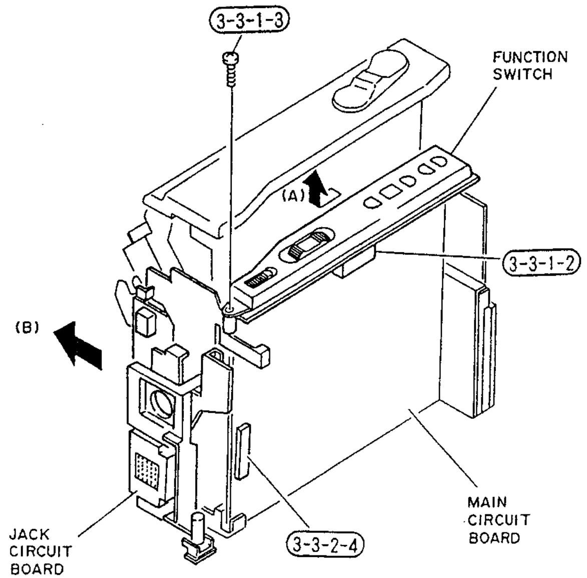

3-3-1-3
FUNCTION SWITCH
(A)
3-3-1-2
(B)
MAIN CIRCUIT BOARD
JACK CIRCUIT BOARD
3-3-2-4

Fig. 2-11

3-4. DC-DC Converter, Fuse Circuit Board, Power Save Switch

ORDER FOR REMOVING PARTS	*ITEM No.*
· Right Case	3-1

(1) DC-DC Converter
1) Disconnect two (2) connectors (CN091, CN092) on the DC-DC converter. (See Fig. 2-12)
2) Release one (1) tab and remove the DC-DC converter in the direction of arrow (A).

(2) Fuse Circuit Board, Power Save Switch
1) Disconnect connector CN092 on the DC-DC converter. (See Fig. 2-12)
2) Release one (1) tab and remove the fuse circuit board in the direction of arrow (A).
3) Disconnect one (1) flat cable (CN908) on the main circuit board.
4) Release two (2) tabs and remove the power save switch in the direction of arrow (B).

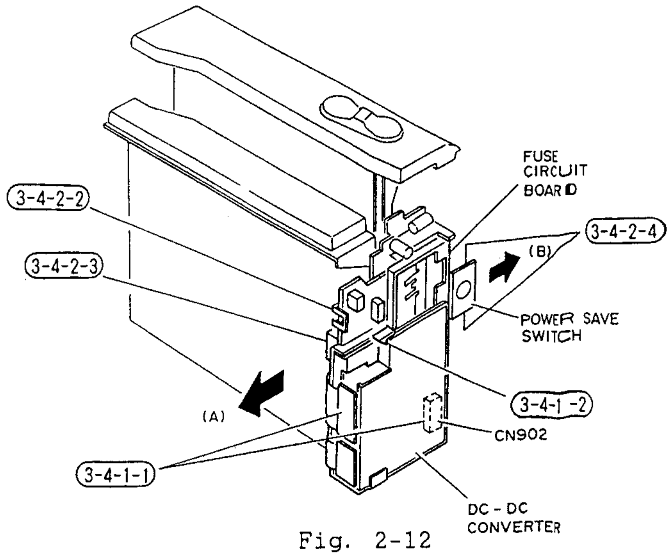

FUSE CIRCUIT BOARD
3-4-2-2
3-4-2-4
(B)
3-4-2-3
POWER SAVE SWITCH
(A)
3-4-1-2
CN902
3-4-1-1
DC-DC CONVERTER

Fig. 2-12

3-5. VCR Frame

ORDER FOR REMOVING PARTS	*ITEM No.*
· Right Case	3-1
· Main Circuit Board	3-2
· Function Switch, Jack Circuit Board	3-3
· DC-DC Converter, Fuse Circuit Board, Power Save Switch	3-4

1) Remove three (3) screws holding the VCR frame. (See Fig. 2-13)
2) Remove the VCR frame in the direction of the arrow.

3-6. Zoom Switch, Tape Transport Mechanism

ORDER FOR REMOVING PARTS	*ITEM No.*
· Right Case	3-1

1) Remove the IC401. (See Fig. 2-9)

(1) Zoom Switch

2) Disconnect one (1) flat cable (CN902) on the main circuit board. (See Fig. 2-13)
3) Remove three (3) screws holding the VCR frame.
4) Open the VCR frame with the main circuit board in the direction of the arrow.
5) Release one (1) tab and remove the flat cable holder. (See Fig. 2-14)
6) Release two (2) tabs and remove the zoom switch in the direction of the arrow. (See Fig. 2-15)

(2) Tape Transport Mechanism

7) Disconnect four (4) flat cables (CN612, CN613, CN905, CN907) on the main circuit board. (See Fig. 2-13)
8) Disconnect two (2) connectors (CN212, CN904) on the main circuit board.
9) Disconnect three (3) flat cables (CN211, CN611, CN905) on the main circuit board. (See Fig. 2-14)

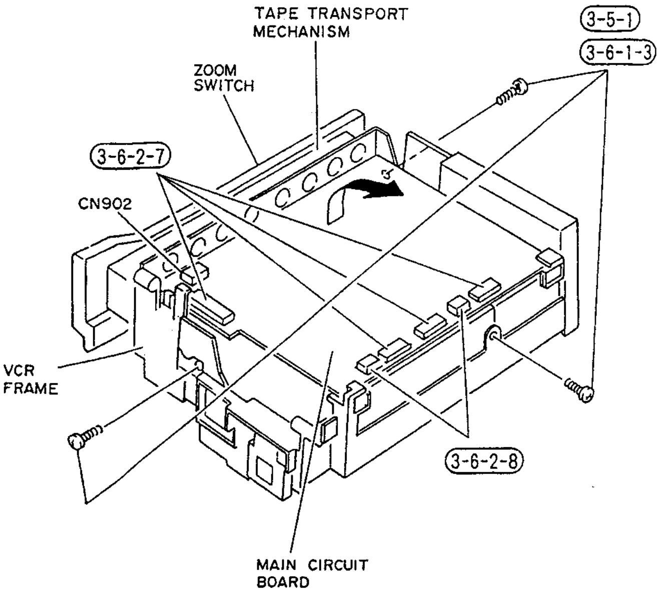

TAPE TRANSPORT MECHANISM
3-5-1
3-6-1-3
ZOOM SWITCH
3-6-2-7
CN902
VCR FRAME
3-6-2-8
MAIN CIRCUIT BOARD

Fig. 2-13

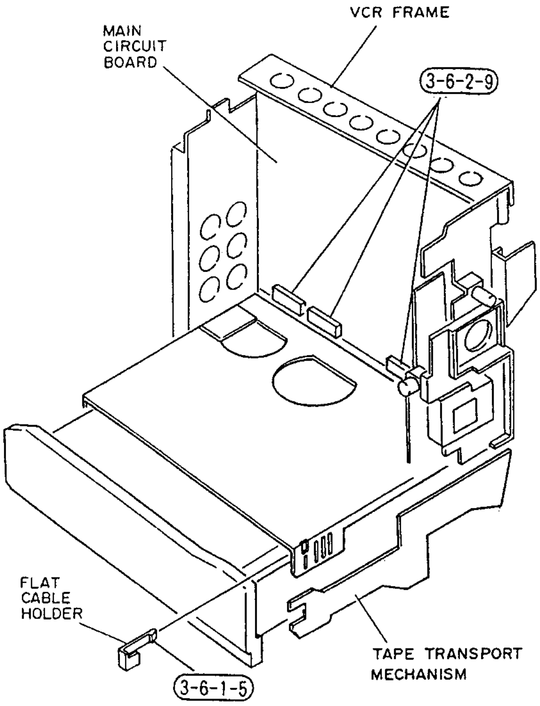

MAIN CIRCUIT BOARD
VCR FRAME
3-6-2-9
FLAT CABLE HOLDER
3-6-1-5
TAPE TRANSPORT MECHANISM

Fig. 2-14

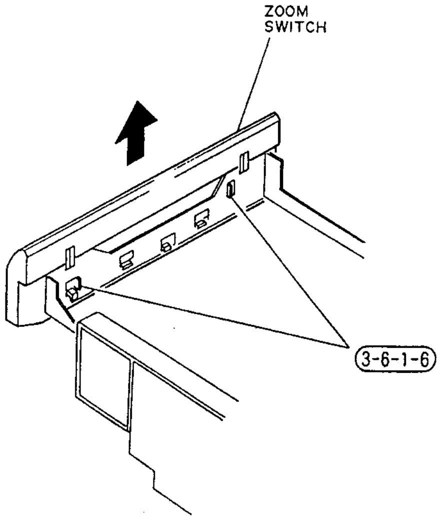
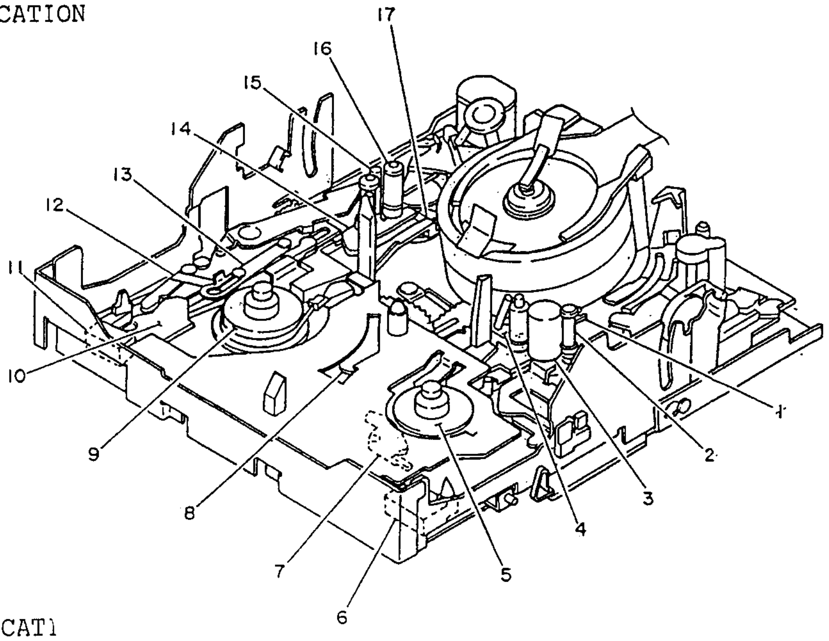

ZOOM SWITCH
3-6-1-6

Fig. 2-15

MAIN MECHANICAL COMPONENTS IDENTIFICATION (SUB CHASSIS)

1. Take-up Guide Roller Rail
2. Take-up Guide Arm
3. Pressure Roller
4. Take-up Guide Roller Base
5. Take-up Reel Disk
6. Safety Tab/Tape Select Switch
7. Take-up Reel Brake
8. Reel Drive Idler
9. Supply Reel Disk
10. Supply Reel Brake
11. Tape Thickness Switch
12. Tension Control Arm
13. Tension Relay Arm
14. Supply Guide Roller Base
15. Tension Arm
16. Supply Guide Roller (3)
17. Supply Guide Roller Rail


17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

MAIN MECHANICAL COMPONENTS IDENTIFICATI (MAIN CHASSIS)

1. Cylinder
2. Take-up Guide Post
3. Capstan Motor
4. Centre Relay Gear
5. Reel Drive Belt
6. Pressure Roller Drive Arm
7. Take-up Loading Cam Gear
8. Eject Arm
9. Cassette Holder Switch
10. Centre Gear
11. Supply Cam Gear Holder
12. Sub Chassis Slide Arm
13. Supply Loading Cam Gear
14. Supply Brake Gear
15. Slide Gear
16. Mechanism State Switch
17. Loading Gear (3)
18. Loading Gear (2)
19. Loading Gear (1)
20. Loading Motor
21. Supply Guide Roller (2)
22. Cylinder Base

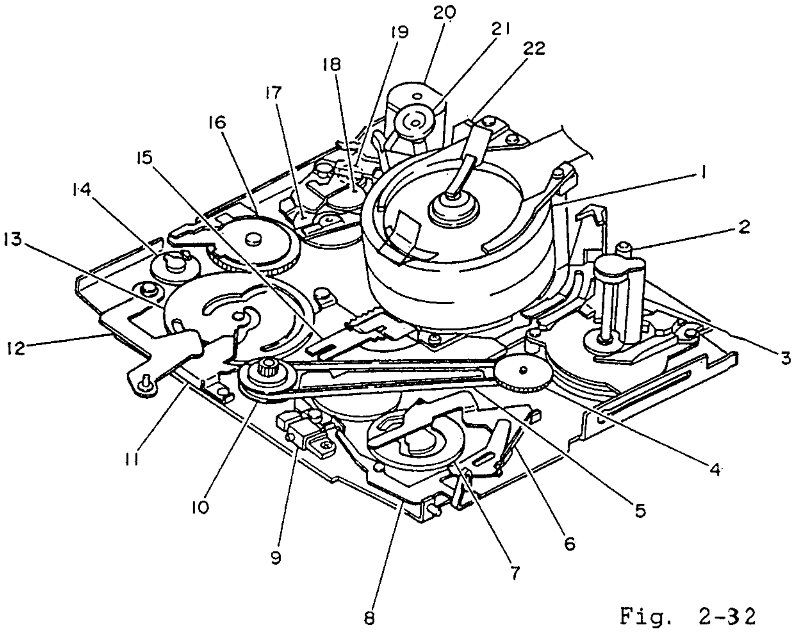

20
19
21
22
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Fig. 2-32

4. SUB CHASSIS ASSEMBLY REMOVAL

ORDER FOR REMOVING PARTS	ITEM No.
· Zoom Switch, Tape Transport Mechanism	3-6

Note: Set the unit to the eject state. Apply DC 3V to pin 1 of CN904 (loading motor) to set the unit to eject state with the tape transport mechanism removed (use CN904 pin 2 as ground).

4-1. Main Chassis Bracket (1), (2)

Note: Lower the cassette holder to lock it when removing main chassis bracket (1)and (2).

1) Remove three (3) screws holding the main chassis bracket (1). (See Fig. 2-33)
2) Remove five (5) screws holding the main chassis bracket (2).

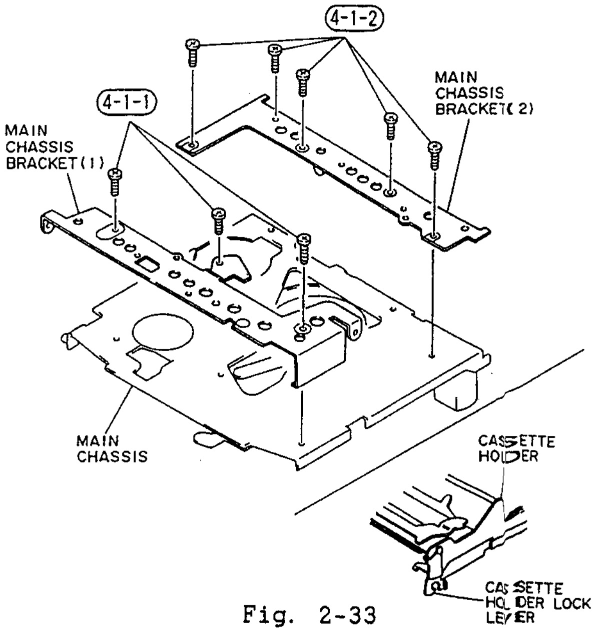

4-1-2
4-1-1
MAIN CHASSIS BRACKET(2)
MAIN CHASSIS BRACKET(1)
MAIN CHASSIS
CASSETTE HOLDER
CASSETTE HOLDER LOCK LEVER

Fig. 2-33

4-2. Cassette Holder

1) Remove two (2) screws and remove the cassette holder in the direction of the arrow. (See Fig. 2-34)

Note: Take care of the following when reinstalling the cassette holder in the main chassis. (See Figs. 2-34, 2-35)

① Section (A) of the cassette holder should be inserted into section (B) (recess) of the main chassis.

② Section (D) of the cassette holder should be inserted into section (C) of the sub chassis. Section (D) is between the cassette holder and cassette holder slide chassis.

③ Section (F) of the cassette holder should be inserted into section (E) of the sub chassis. Section (F) is between the cassette holder and cassette holder slide chassis.

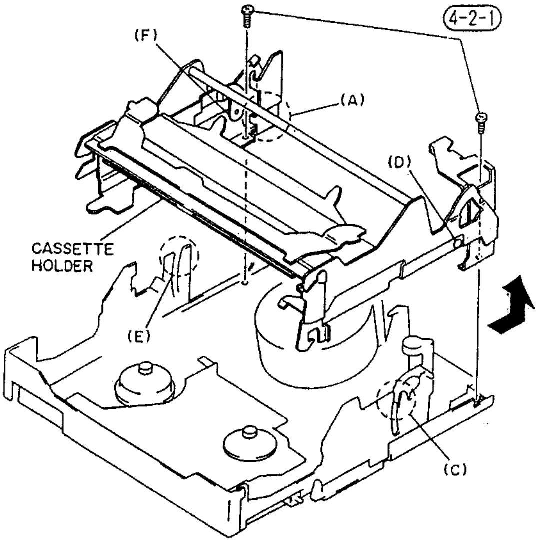

4-2-1
(F)
(A)
(D)
CASSETTE HOLDER
(E)
(C)

Fig. 2-34

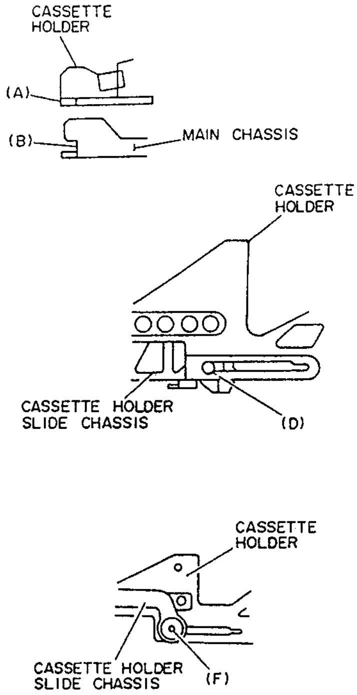

CASSETTE HOLDER
(A)
(B)
MAIN CHASSIS
CASSETTE HOLDER
CASSETTE HOLDER SLIDE CHASSIS
(D)
CASSETTE HOLDER
CASSETTE HOLDER SLIDE CHASSIS
(F)

Fig. 2-35

4-3. Sub Chassis Cover

ORDER FOR REMOVING PARTS	ITEM No.
· Cassette Holder	4-2

1) Remove three (3) screws holding the sub chassis cover. (See Fig. 2-36)

2) Release one (1) tab and remove the end LED from the sub chassis cover.

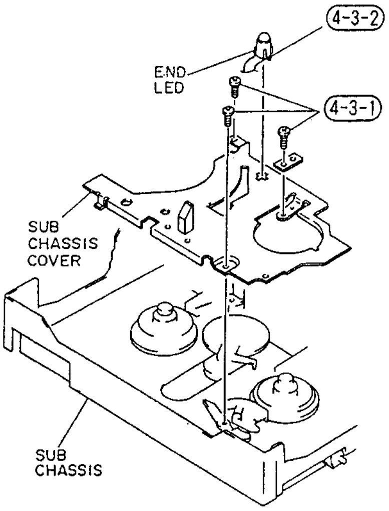

4-3-2
END LED
4-3-1
SUB CHASSIS COVER
SUB CHASSIS

Fig. 2-36

4-4. Reel Drive Idler, Supply Reel Brake, Tension Relay Arm, Tension Control Arm

ORDER FOR REMOVING PARTS	ITEM No.
· Cassette Holder	4-2
· Sub Chassis Cover	4-3

(1) Reel Drive Idler

1) Remove one (1) washer and pull out the reel drive idler from the main chassis. (See Fig. 2-37)

(2) Supply Reel Brake, Tension Relay Arm, Tension Control Arm

1) Remove one (1) washer and pull out the supply reel brake from the sub chassis. (See Fig. 2-37)
2) Remove one (1) washer holding the tension relay arm
3) Remove one (1) washer holding the tension control arm.
4) Pull out the tension relay arm and tension control arm from the sub chassis.

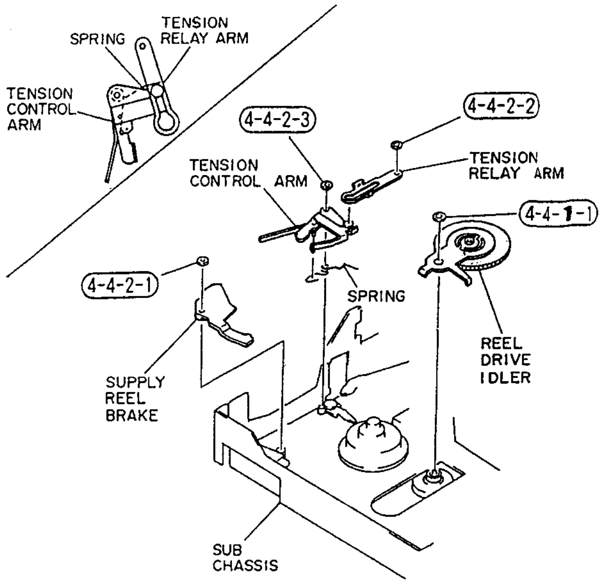

SPRING
TENSION RELAY ARM
TENSION CONTROL ARM
4-4-2-3
4-4-2-2
TENSION CONTROL ARM
TENSION RELAY ARM
4-4-1-1
4-4-2-1
SPRING
REEL DRIVE IDLER
SUPPLY REEL BRAKE
SUB CHASSIS

Fig. 2-37

4-5. Pressure Roller, Take-up Guide Arm, Middle Pole

ORDER FOR REMOVING PARTS	*ITEM No.*
· Cassette Holder	4-2
· Sub Chassis Cover	4-3

1) Release the spring between the pressure roller and sub chassis. (See Fig. 2-38)
2) Move the pressure roller in the direction of the arrow and pull out the pressure roller from the sub chassis.
3) Pull out the take-up guide arm from the sub chassis. (See Fig. 2-39)
4) Remove one (1) washer from the middle pole shaft and pull out the middle pole from the main chassis.

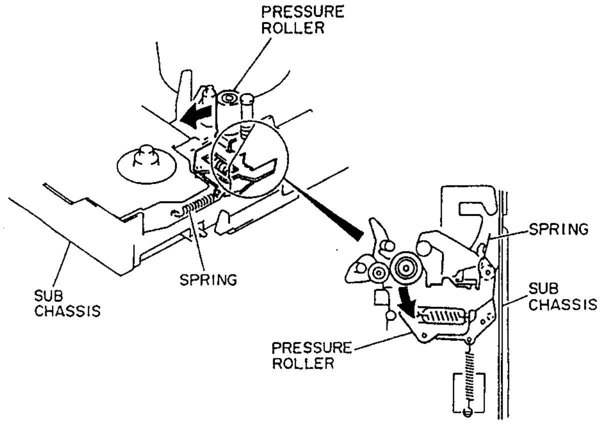

PRESSURE ROLLER
SPRING
SUB CHASSIS
SPRING
SUB CHASSIS
SUB CHASSIS
PRESSURE ROLLER

Fig. 2-38

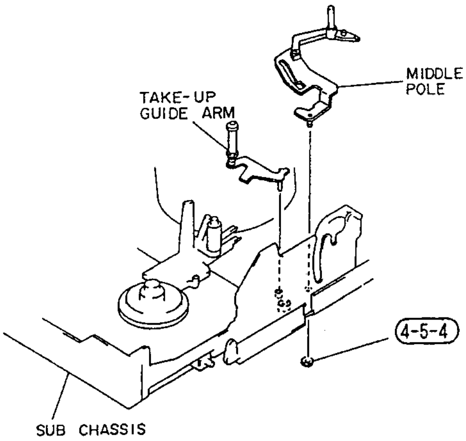

MIDDLE POLE
TAKE-UP GUIDE ARM
4-5-4
SUB CHASSIS

Fig. 2-39

4-6. Sub Chassis Assembly

ORDER FOR REMOVING PARTS	*ITEM No.*
· Cassette Holder	4-2
· Sub Chassis Cover	4-3
· Reel drive Idler, Supply Reel Brake, Tension Relay Arm, Tension Control Arm	4-4
· Pressure Roller, Take-up Guide Arm, Middle Pole	4-5

1) Remove three (3) screws holding the sub chassis assembly. (See Fig. 2-40)
2) Remove the sub chassis assembly in the direction of the arrow from the main chassis assembly.

Note: Adjust as follows after installing the sub chassis assembly.
- CHAPTER 3
  3. SUB CHASSIS SLIDE AMOUNT ADJUSTMENT.

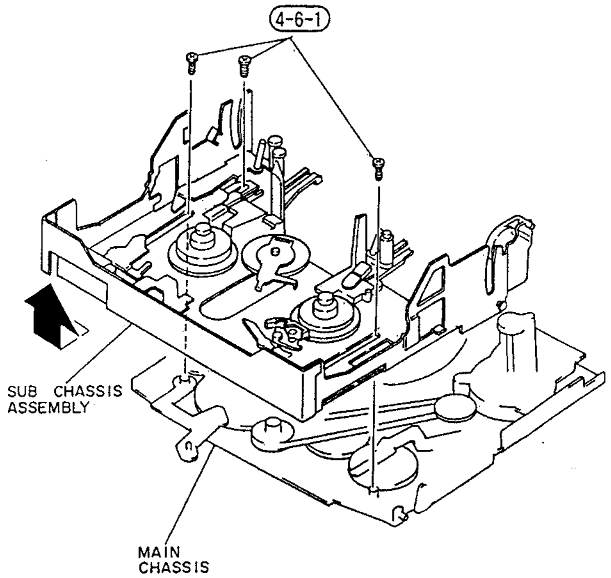

4-6-1
SUB CHASSIS ASSEMBLY
MAIN CHASSIS

Fig. 2-40

5. MAIN MECHANICAL COMPONENTS ON THE SUB CHASSIS REMOVAL

ORDER FOR REMOVING PARTS	*ITEM No.*
· Zoom Switch, Tape Transport Mechanism	3-6
· Cassette Holder	4-2

5-1. Cassette Holder Damper

1) Remove one (1) E-ring and remove the cassette holder damper from the sub chassis. (See Fig. 2-41)

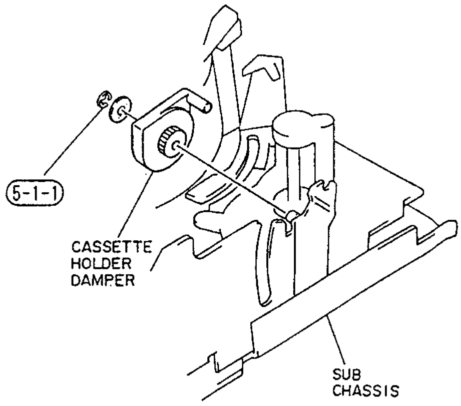

5-1-1
CASSETTE HOLDER DAMPER
SUB CHASSIS

Fig. 2-41

5-2. Sub Chassis Slide Stopper

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Cover	4-3

1) Remove two (2) screws holding the sub chassis slide stopper. (See Fig. 2-42)

Note: Adjust as follows after installing the sub chassis slide stopper.
- CHAPTER 3
  3. SUB CHASSIS SLIDE AMOUNT ADJUSTMENT.

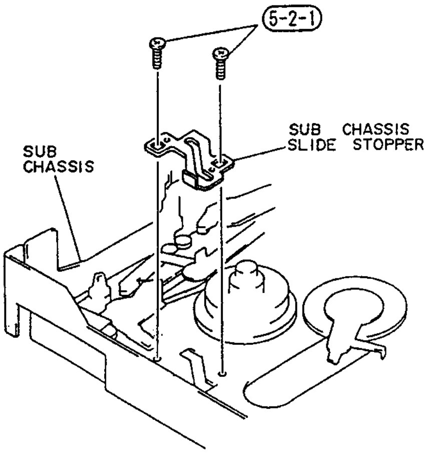

5-2-1
SUB CHASSIS SLIDE STOPPER
SUB CHASSIS

Fig. 2-42

5-3. Tension Arm, Supply Guide Roller (3), Tension Band, Guide Roller Spring

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Cover	4-3
· Supply Reel Brake, Tension Relay Arm, Tension Control Arm	4-4

1) Remove one (1) screw holding the tension band. (See Fig. 2-43)
2) Release the tension spring between the sub chassis and tension arm.
3) Remove one (1) washer holding the tension arm and supply guide roller (3)
4) Pull out the tension arm, supply guide roller (3) and tension band from the sub chassis.
5) Release (2) tabs and remove the tension band from the tension arm.
6) Remove one (1) washer holding the guide roller spring.

Note: Adjust as follows after installing the tension arm and tension band.
- CHAPTER 3
  4-2. Tension Pole Position Adjustment.
  4-3. Tension Adjustment

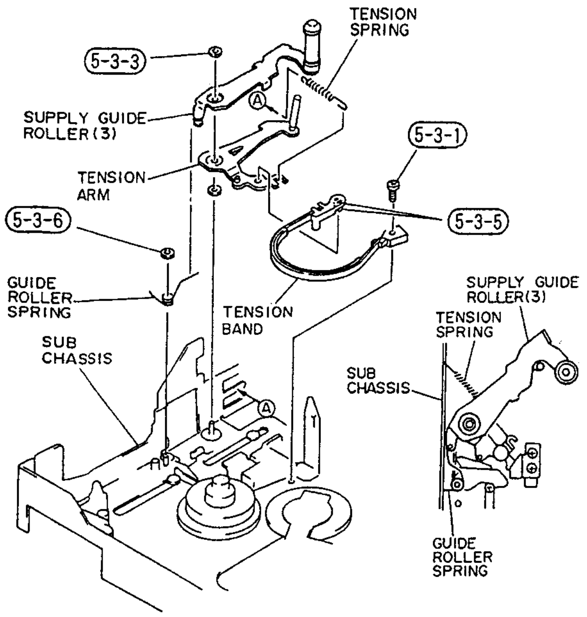

TENSION SPRING
5-3-3
SUPPLY GUIDE ROLLER(3)
A
5-3-1
TENSION ARM
5-3-6
5-3-5
GUIDE ROLLER SPRING
TENSION BAND
SUB CHASSIS
A
SUPPLY GUIDE ROLLER(3)
TENSION SPRING
SUB CHASSIS
GUIDE ROLLER SPRING

Fig. 2-43

5-4. Take-up Brake Control Arm, Take-up Brake Drive Arm, Take-up Reel Brake, Take-up Reel Disk

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Cover	4-3

1) Pull out the take-up brake control arm from the sub chassis. (See Fig. 2-44)
2) Release the spring between the take-up brake drive arm and sub chassis.
3) Remove one (1) washer and pull out the take-up brake drive arm from the sub chassis.
4) Remove one (1) washer and pull out the take-up reel brake from the sub chassis.
5) Pull out the take-up reel disk from the sub chassis.

Note: Adjust as follows after installing the take-up reel disk.
- CHAPTER 3
  4-1. REEL DISK HEIGHT ADJUSTMENT.

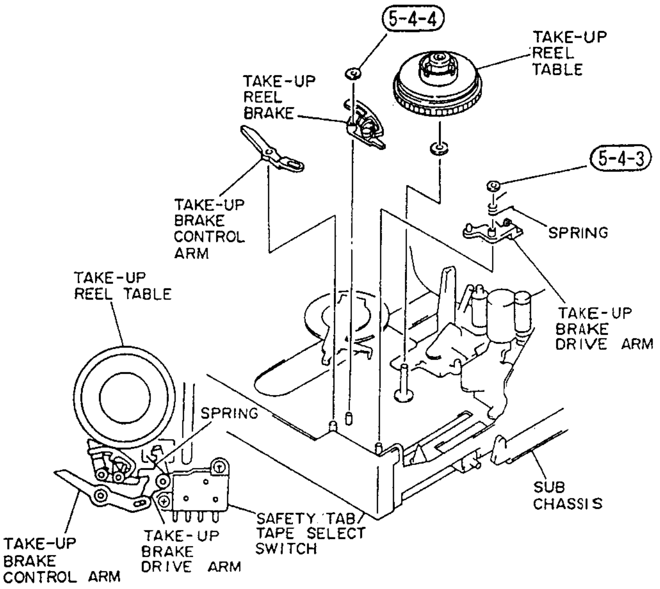

5-4-4
TAKE-UP REEL TABLE
TAKE-UP REEL BRAKE
5-4-3
SPRING
TAKE-UP BRAKE CONTROL ARM
TAKE-UP REEL TABLE
TAKE-UP BRAKE DRIVE ARM
SPRING
SUB CHASSIS
SAFETY TAB/TAPE SELECT SWITCH
TAKE-UP BRAKE CONTROL ARM
TAKE-UP BRAKE DRIVE ARM

Fig. 2-44

5-5. Take-up Guide Roller Base, Supply Guide Roller Base

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Cover	4-3
· Reel drive Idler, Supply Reel Brake, Tension Relay Arm, Tension Control Arm	4-4
· Pressure Roller, Take-up Guide Arm, Middle Pole	4-5
· Sub Chassis Assembly	4-6

(1) Take-up Guide Roller Base

1) Turn the take-up loading link gear in the direction of arrow (A) to release the engagement with the sub chassis. (See Fig. 2-45)

(2) Supply Guide Roller Base

1) Turn the supply loading link gear in the direction of arrow (B) to release the engagement with the sub chassis. (See Fig. 2-45)

Note: Adjust as follows after installing the take-up guide roller base or supply guide roller base.
- CHAPTER 3
  4-6. Supply Guide Roller (1)/ Take-up Guide Roller Height Adjustment.

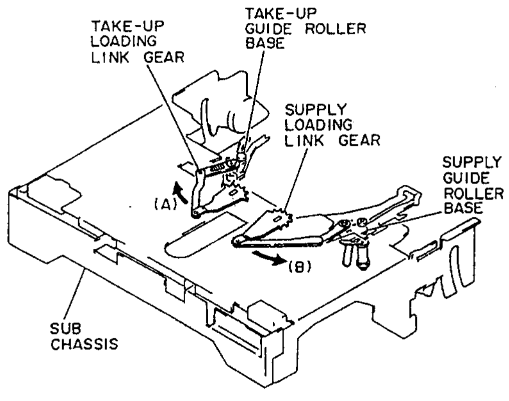

TAKE-UP LOADING LINK GEAR
TAKE-UP GUIDE ROLLER BASE
SUPPLY LOADING LINK GEAR
SUPPLY GUIDE ROLLER BASE
(A)
(B)
SUB CHASSIS

Fig. 2-45

5-6. Take-up Guide Roller Rail, Supply Guide Roller Rail, Supply Reel Disk

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Cover	4-3
· Reel Drive Idler, Supply Reel Brake, Tension Relay Arm, Tension Control Arm	4-4
· Pressure Roller, Take-up Guide Arm, Middle Pole	4-5
· Sub Chassis Assembly	4-6

(1) Take-up Guide Roller Rail

1) Remove the take-up guide roller base. (See Fig. 2-45)
2) Remove one (1) screw holding the take-up guide roller rail. (See Fig. 2-46)

(2) Supply Guide Roller Rail, Supply Reel Disk

1) Remove the supply guide roller base. (See Fig. 2-45)
2) Remove two (2) screws holding the tension band holder and supply guide roller rail. (See Fig. 2-46)
3) Pull out the supply reel disk from the sub chassis.

Note: Adjust as follows after installing the supply reel disk.
· CHAPTER 3
4-1. REEL DISK HEIGHT ADJUSTMENT.

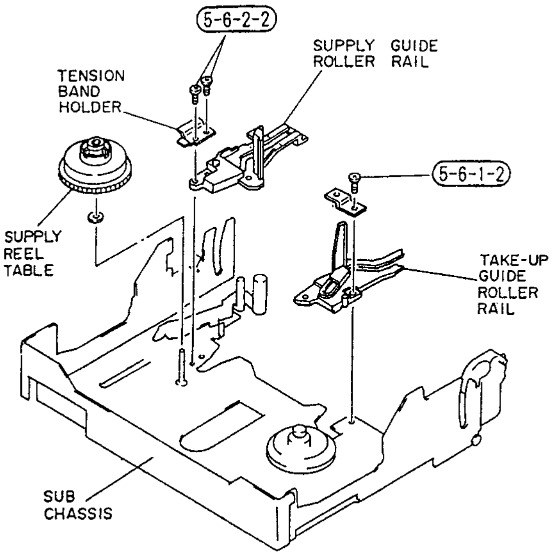

5-6-2-2
SUPPLY GUIDE ROLLER RAIL
TENSION BAND HOLDER
5-6-1-2
SUPPLY REEL TABLE
TAKE-UP GUIDE ROLLER RAIL
SUB CHASSIS

Fig. 2-46

5-7. Trouble Sensor Assembly (Supply End Sensor, Take-up End Sensor, Take-up Reel Sensor, End LED, Safety Tab/Tape Select Switch, Tape Thickness Switch)

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Cover	4-3
· Reel drive Idler, Supply Reel Brake, Tension Relay Arm, Tension Control Arm	4-4
· Pressure Roller, Take-up Guide Arm, Middle Pole	4-5
· Sub Chassis Assembly	4-6
· Take-up Guide Roller Base	5-5
· Take-up Guide Roller Rail	5-6

1) Remove one (1) screw holding the safety tab/tape select switch. (See Fig. 2-47)
2) Remove one (1) screw holding the tape thickness switch
3) Remove one (1) screw holding the take-up end sensor. (See Fig. 2-48)
4) Remove one (1) screw holding the supply end sensor.
5) Peel out the trouble sensor assembly from the sub chassis.

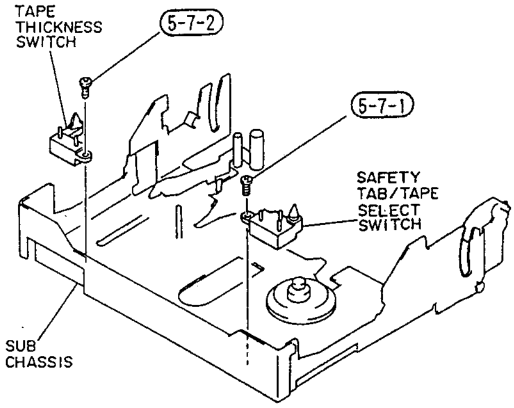

TAPE THICKNESS SWITCH
5-7-2
5-7-1
SAFETY TAB/TAPE SELECT SWITCH
SUB CHASSIS

Fig. 2-47

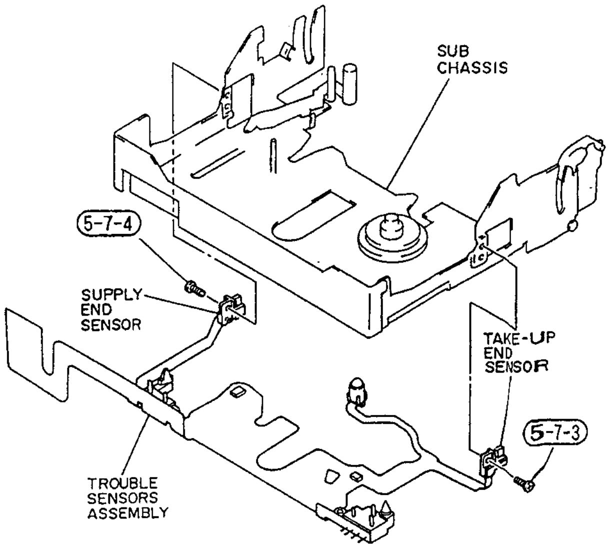

SUB CHASSIS
5-7-4
SUPPLY END SENSOR
TAKE-UP END SENSOR
5-7-3
TROUBLE SENSORS ASSEMBLY

Fig. 2-48

6. MAIN MECHANICAL COMPONENTS ON THE MAIN CHASSIS REMOVAL

ORDER FOR REMOVING PARTS	*ITEM No.*
· Zoom Switch, Tape Transport Mechanism	3-6
· Cassette Holder	4-2

6-1. Sub Chassis Slide Arm, Supply Brake Gear

ORDER FOR REMOVING PARTS	ITEM No.
· Sub Chassis Cover	4-3
· Reel Drive Idler, Supply Reel Brake, Tension Relay Arm, Tension Control Arm	4-4
· Pressure Roller, Take-up Guide Arm, Middle Pole	4-5
· Sub Chassis Assembly	4-6

(1) Sub Chassis Slide Arm

1) Pull out the sub chassis slide arm and spacer from the main chassis. (See Fig. 2-49)

(2) Supply Brake Gear

1) Pull out the supply brake gear from the main chassis (See Fig. 2-49)

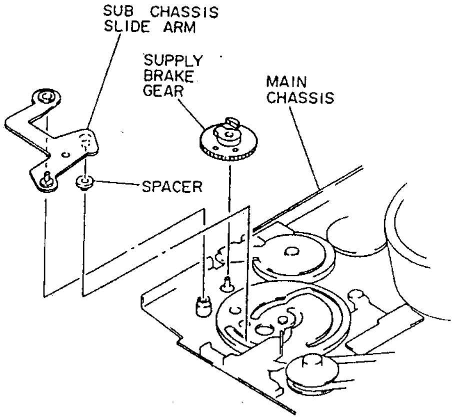


Fig. 2-49

6-2. Cylinder Assembly

1) Remove three (3) screws holding the cylinder assembly. (See Fig. 2-50)

Note: Be careful that your fingers or tools do not touch the video head tips during work.
Attach the cylinder after reinstalling all other components.
Adjust as follows after installing the cylinder assembly.
· CHAPTER 3
5. ADJUSTMENTS AFTER REPLACING CYLINDER.

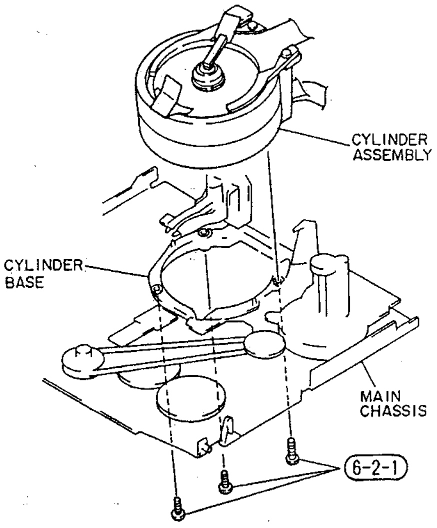


Fig. 2-50

6-3. Capstan Motor, Guide Roller Relay Rail (1)

(1) Capstan Motor

1) Remove three (3) screws and remove the capstan motor from the main chassis. (See Fig. 2-51)

(2) Guide Roller Relay Rail (1)

2) Pull out guide roller relay rail (1) from the main chassis. (See Fig. 2-51)

Note: Adjust as follows after installing the capstan motor.
· CHAPTER 3
4-5. Take-up Guide Pole/Take-up Guide Post Height Adjustment.

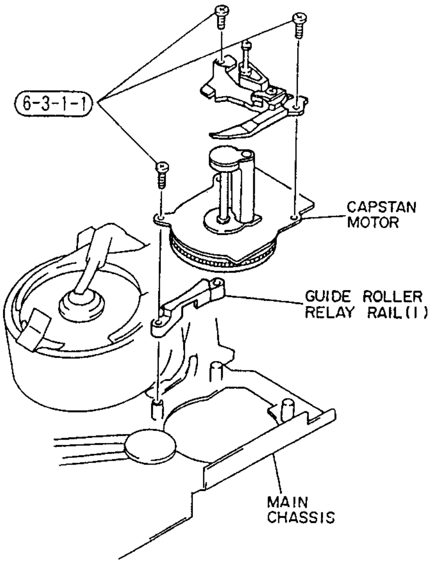


Fig. 2-51

6-4. Supply Guide Roller (2), Supply Tape Guide, Loading Motor

(1) Supply Guide Roller (2), Supply Tape Guide

1) Remove one (1) washer holding the supply guide roller (2). (See Fig. 2-52)
2) Remove two (2) screws holding the supply tape guide.
3) Remove the supply guide roller (2) and supply tape guide from the main chassis.

(2) Loading Motor

4) Remove one (1) screw and remove the loading motor from the main chassis. (See Fig. 2-52)

Note: Adjust as follows after installing the loading motor.
· CHAPTER 3
4-4. Supply Guide Roller (2) Height Adjustment.

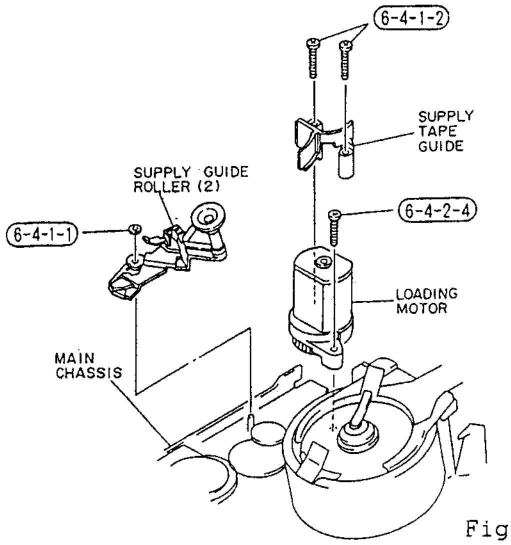

6-4-1-2
SUPPLY TAPE GUIDE
SUPPLY GUIDE ROLLER (2)
6-4-2-4
6-4-1-1
LOADING MOTOR
MAIN CHASSIS

Fig. 2-52

6-5. Loading Gears (1), (2), (3), Mechanism State Switch, Support Plate

Note: Remove the sub chassis assembly from the main chassis as previously given.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Main Chassis Bracket (1), (2)	4-1
· Supply Guide Roller (2), Supply Tape Guide, Loading Motor	6-4

(1) Loading Gear (2)

1) Remove one (1) washer and pull out loading gear (2) from the main chassis. (See Fig. 2-53)

(2) Loading Gear (1)

2) Remove one (1) washer and pull out loading gear (1) from the main chassis. (See Fig. 2-53)

(3) Loading Gear (3), Mechanism State Switch, Support Plate

2) Remove one (1) screw holding the loading gear holder. (See Fig. 2-53)
3) Pull out loading gear (3) and mechanism state switch from the main chassis.
4) Remove two (2) screw holding the support plate. (See Fig. 2-54)
5) Peel out the flat cable of the mechanism state switch from the main chassis.

Note: Adjust as follows after installing the loading gears (1), (2), (3) and mechanism state switch.
- CHAPTER 3
  2. PHASE MATCHING IN ASSEMBLY.

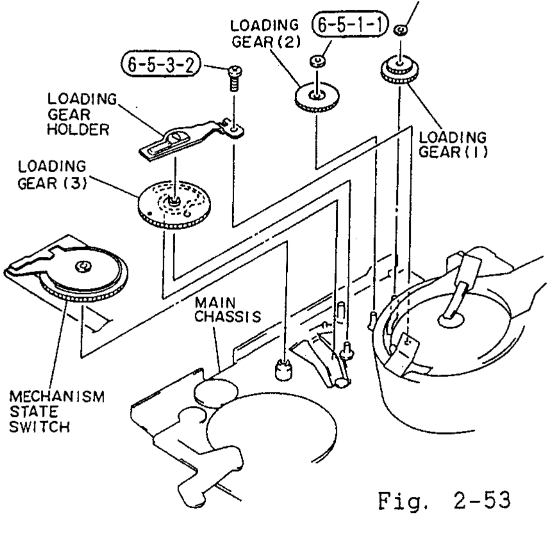

6-5-2-2
LOADING GEAR (2)
6-5-1-1
6-5-3-2
LOADING GEAR HOLDER
LOADING GEAR (1)
LOADING GEAR (3)
MAIN CHASSIS
MECHANISM STATE SWITCH

Fig. 2-53

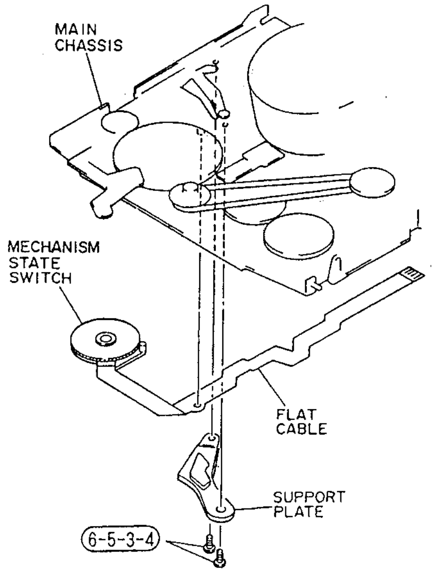

MAIN CHASSIS
MECHANISM STATE SWITCH
FLAT CABLE
SUPPORT PLATE
6-5-3-4

Fig. 2-54

6-6. Supply Loading Cam Gear

Note: Remove the sub chassis assembly from the main chassis as previously given.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Sub Chassis Slide Arm	6-1

1) Remove two (2) screws holding the supply loading cam gear holder. (See Fig. 2-55)
2) Remove one (1) screw holding the supply loading cam gear from the main chassis.

Note: Adjust as follows after installing the supply loading cam gear.
- CHAPTER 3
  2. PHASE MATCHING IN ASSEMBLY.

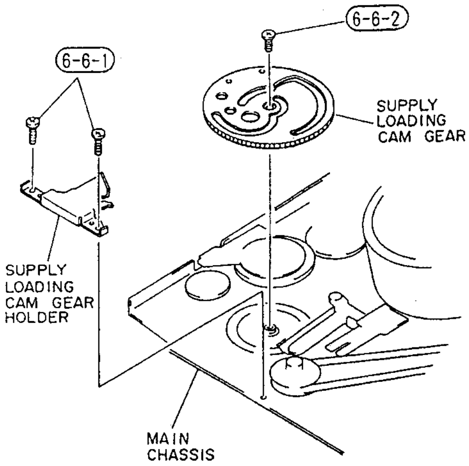

6-6-2
6-6-1
SUPPLY LOADING CAM GEAR
SUPPLY LOADING CAM GEAR HOLDER
MAIN CHASSIS

Fig. 2-55

6-7. Centre Gear, Centre Relay Gear, Reel Drive Belt

Note: Remove the sub chassis assembly from the main chassis as previously given.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Capstan Motor	6-3

1) Remove the oil seal of the centre gear. (See Fig. 2-56)
2) Remove one (1) washer holding the centre relay gear.
3) Pull out the centre gear and centre relay gear with the reel drive belt.

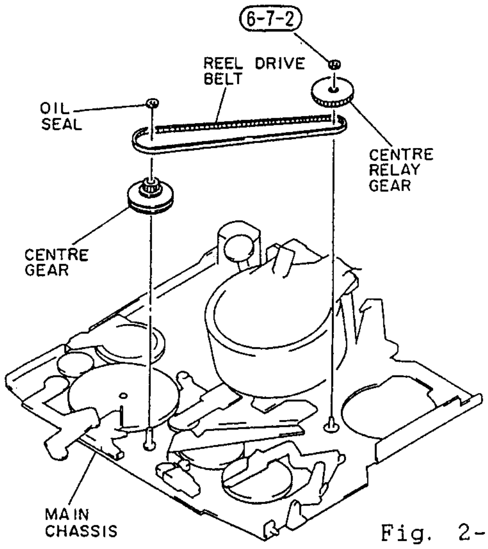

6-7-2
REEL DRIVE BELT
OIL SEAL
CENTRE RELAY GEAR
CENTRE GEAR
MAIN CHASSIS

Fig. 2-56

6-8. Pressure Roller Drive Arm, Eject Arm, Take-up Loading Cam Gear

Note: Remove the sub chassis assembly from the main chassis as previously given.

(1) Pressure Roller Drive Arm

1) Remove one (1) screw and remove the pressure roller drive arm from the main chassis. (See Fig. 2-57)

(2) Eject Arm

2) Remove one (1) screw and remove the eject arm from the main chassis. (See Fig. 2-57)

(3) Take-up Loading Cam Gear

2) Remove one (1) screw and remove the take-up loading cam gear from the main chassis. (See Fig. 2-57)

Note: Adjust as follows after installing the take-up loading cam gear.
- CHAPTER 3
  2. PHASE MATCHING IN ASSEMBLY.

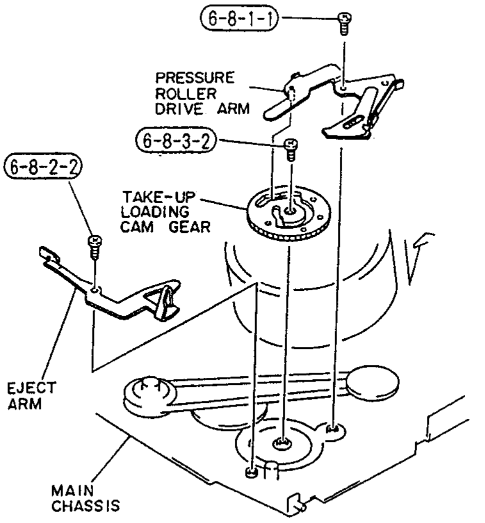

6-8-1-1
PRESSURE ROLLER DRIVE ARM
6-8-3-2
6-8-2-2
TAKE-UP LOADING CAM GEAR
EJECT ARM
MAIN CHASSIS

Fig. 2-57

6-9. Cylinder Base, Guide Roller Relay Rail (2), Slide Gear

Note: Remove the sub chassis assembly from the main chassis as previously given.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Cylinder Assembly	6-2
· Supply Guide Roller (2), Supply Tape Guide, Loading Motor	6-4

Note: Never remove the catcher block from the cylinder base. The catcher blocks and cylinder base are supplied in the assembled state as a service part.

(1) Cylinder Base

1) Remove two (2) screws and remove the cylinder base and slide gear plate from the main chassis. (See Fig. 2-58)

(2) Guide Roller Relay Rail (2)

2) Remove one (1) screw and remove the guide roller relay rail (2) from the main chassis. (See Fig. 2-58)

(3) Slide Gear

2) Remove the slide gear in the direction of the arrow from the main chassis. (See Fig. 2-58)

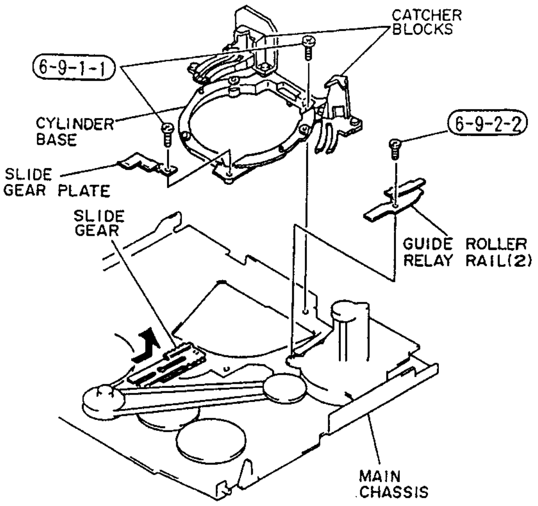

CATCHER BLOCKS
6-9-1-1
CYLINDER BASE
6-9-2-2
SLIDE GEAR PLATE
SLIDE GEAR
GUIDE ROLLER RELAY RAIL(2)
MAIN CHASSIS

Fig. 2-58

6-10. Reel Drive Belt Cover

Note: Remove the sub chassis assembly from the main chassis as previously given.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Cylinder Assembly	6-2
· Capstan Motor	6-3
· Centre Gear, Centre Relay Gear, Reel Drive Belt	6-7
· Cylinder Base, Slide Gear	6-9

1) Remove two (2) screws and remove the reel drive belt cover from the main chassis. (See Fig. 2-59)

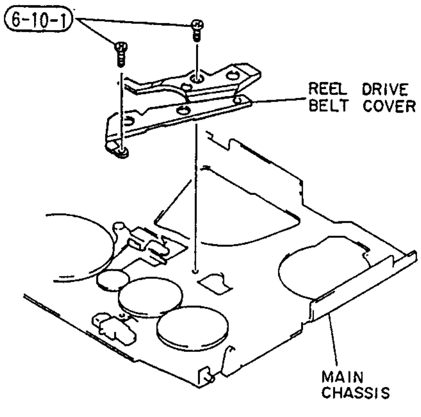

6-10-1
REEL DRIVE BELT COVER
MAIN CHASSIS

Fig. 2-59

6-11. Cassette Holder Switch/Dew Sensor

Note: Remove the sub chassis assembly from the main chassis as previously given.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Main Chassis Bracket (1), (2)	4-1
· Cylinder Assembly	6-2
· Supply Guide Roller (2), Supply Tape Guide, Loading Motor	6-4
· Loading Gear (2), (3), Mechanism State Switch, Support Plate	6-5
· Cylinder Base	6-9

1) Remove one (1) screw holding the cassette holder switch. (See Fig. 2-60)
2) Peel out the cassette holder switch/dew sensor from the main chassis. (See Fig. 2-61)

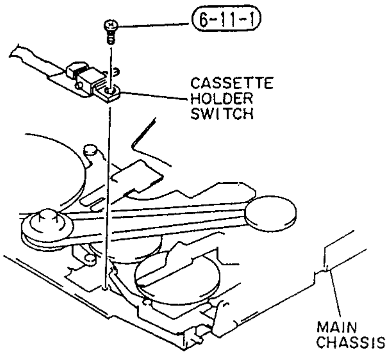

6-11-1
CASSETTE HOLDER SWITCH
MAIN CHASSIS

Fig. 2-60

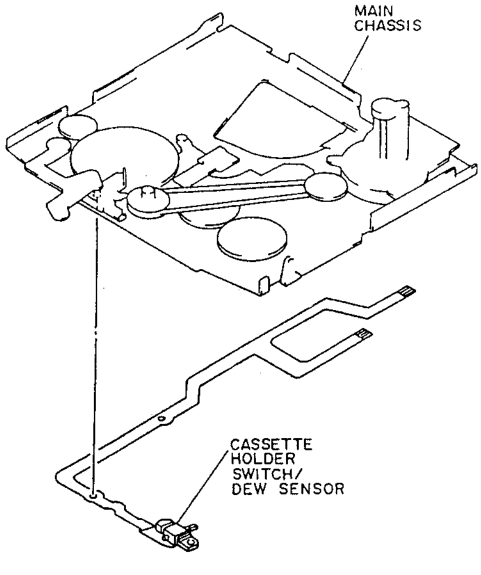

MAIN CHASSIS
CASSETTE HOLDER SWITCH/ DEW SENSOR

Fig. 2-61

7. LENS BLOCK REMOVAL

ORDER FOR REMOVING PARTS	*ITEM No.*
· Lens Block	2-1

7-1. Autofocus Circuit Board, Zoom Motor

(1) Autofocus Circuit Board

1) Disconnect four (4) connectors (CN01AF, CN02AF, CN03AF, CN05AF) on the autofocus circuit board. (See Fig. 2-101)
2) Remove one (1) screw and remove the autofocus circuit board from the lens block.
3) Unsolder one (1) connector (CN05AF) on the autofocus circuit board.

(2) Zoom Motor

4) Remove one (1) screw and remove the zoom motor in the direction of the arrow from the lens block. (See Fig. 2-101)

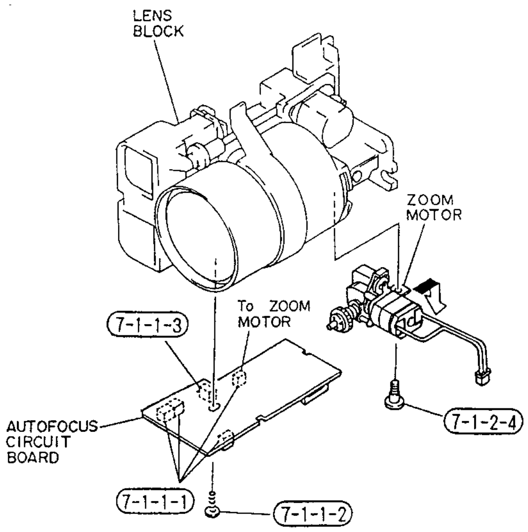

LENS BLOCK
ZOOM MOTOR
To ZOOM MOTOR
7-1-1-3
AUTOFOCUS CIRCUIT BOARD
7-1-2-4
7-1-1-1
7-1-1-2

Fig. 2-101

7-2. Focus Motor, Iris Block

(1) Focus Motor

1) Disconnect connector CN01AF on the autofocus circuit board. (See Fig. 2-102)
2) Remove one (1) screw and remove the focus motor in the direction of arrow (A) from the lens block. (See Fig. 2-103)

(2) Iris Block

Note: Move the relay (backfocus) lens backwards when removing the iris block. Take great care that no dust adheres to the iris block and not scratch it.

1) Peel out the iris tape and remove the iris block in the direction of arrow (B).

Note: Do not re use the iris tape once it has been peeled off. Be sure to perform the backfocus adjustment after installing the iris block.

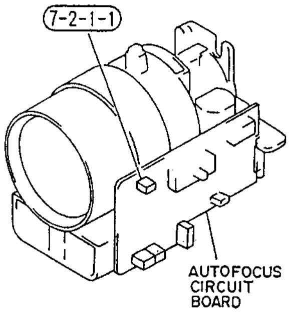

7-2-1-1
AUTOFOCUS CIRCUIT BOARD

Fig. 2-102

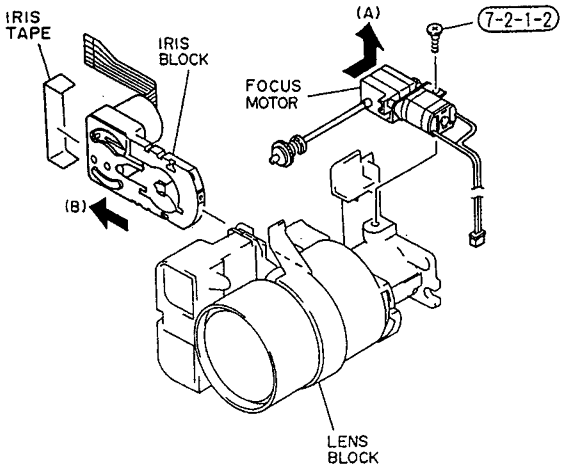

IRIS TAPE
IRIS BLOCK
(A)
7-2-1-2
FOCUS MOTOR
(B)
LENS BLOCK

Fig. 2-103

7-3. AF Block

ORDER FOR REMOVING PARTS	ITEM No.
· Focus Motor	7-2

1) Disconnect two (2) connectors (CN02AF, CN03AF) on the autofocus circuit board. (See Fig. 2-104)
2) Unsolder one (1) connector (CN05AF) on the autofocus circuit board.
3) Remove two (2) screws and remove the AF block from the lens block. (See Fig. 2-105)

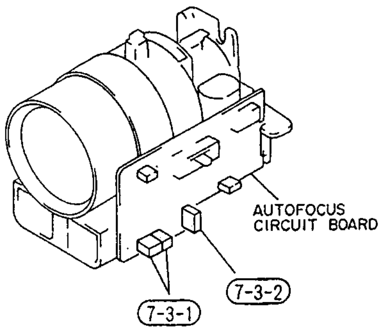

AUTOFOCUS CIRCUIT BOARD
7-3-2
7-3-1

Fig. 2-104

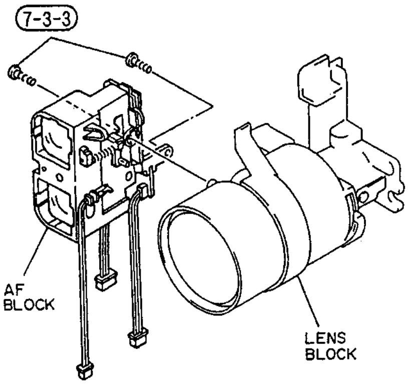

7-3-3
AF BLOCK
LENS BLOCK

Fig. 2-105

7-4. Index Ring

ORDER FOR REMOVING PARTS	ITEM No.
· Autofocus Circuit Board	7-1

1) Set the zoom ring to the telephoto end and turn the focus ring to the infinity (∞) end. (See Fig. 2-106)
2) Remove one (1) screw holding the index ring.
3) Turn the index ring in the direction of the arrow to release one (1) tab.
4) Release one (1) tab holding the index ring . (See Fig. 2-107)

Note: Be careful not move to the zoom ring or focus ring when removing the index ring.

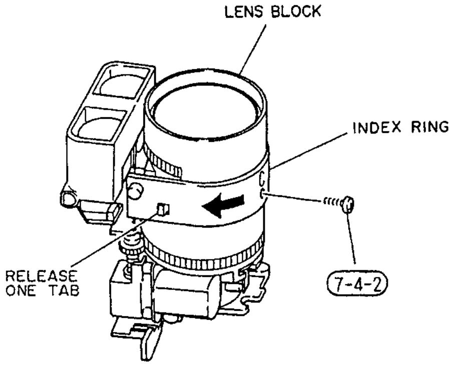

LENS BLOCK
INDEX RING
RELEASE ONE TAB
7-4-2

Fig. 2-106

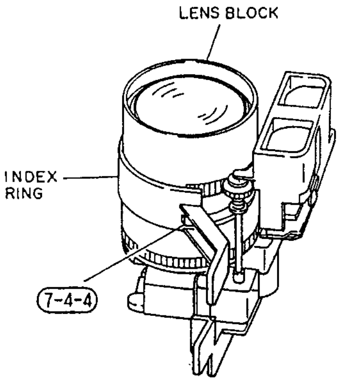

LENS BLOCK
INDEX RING
7-4-4

Fig. 2-107

8. ELECTRONIC VIEWFINDER (EVF) REMOVAL

ORDER FOR REMOVING PARTS	ITEM No.
· Electronic Viewfinder (EVF)	1-1

8-1. EVF Shoe

1) Remove the EVF cable holder (1). (See Fig. 2-151)
2) Remove the EVF shoe in the direction of the arrow.

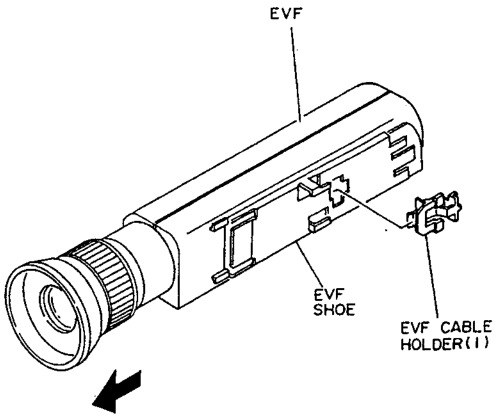

EVF
EVF SHOE
EVF CABLE HOLDER(1)

Fig. 2-151

8-2. EVF Lens Block, EVF Right Case

1) Turn the EVF lens block in the direction of arrow (A) and remove the EVF lens block in the direction of arrow (B). (See Fig. 2-152)
2) Turn the EVF shoe holder in the direction of arrow (C) and remove three (3) screws holding the EVF right case.
3) Open the EVF right case and EVF left case.
4) Disconnect one (1) flat cable (CN801) on the indi. circuit board. (See Fig. 2-153)

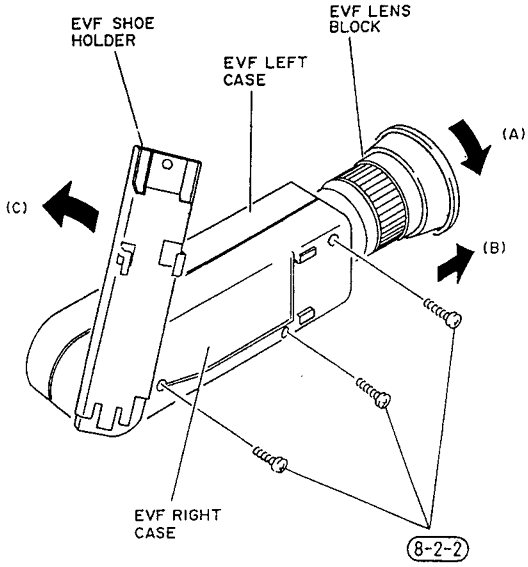

EVF SHOE HOLDER
EVF LENS BLOCK
EVF LEFT CASE
(A)
(C)
(B)
EVF RIGHT CASE
8-2-2

Fig. 2-152

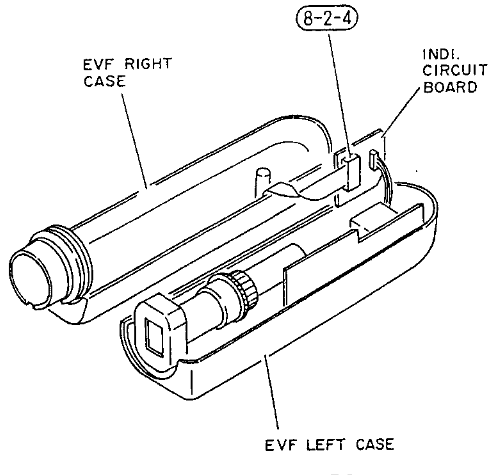

8-2-4
EVF RIGHT CASE
INDI. CIRCUIT BOARD
EVF LEFT CASE

Fig. 2-153

8-3. EVF Left Case, Electronic Viewfinder (EVF) Circuit board, CRT

ORDER FOR REMOVING PARTS	ITEM No.
· EVF Lens Block, EVF Right Case	8-2

(1) EVF Left Case

1) Remove the EVF circuit board and CRT in the direction of the arrow from the EVF left case. (See Fig. 2-154)

(2) EVF Circuit Board, CRT

2) Disconnect connector CN1D on the EVF circuit board. (See Fig. 2-155)
3) Disconnect CRT socket from the CRT.

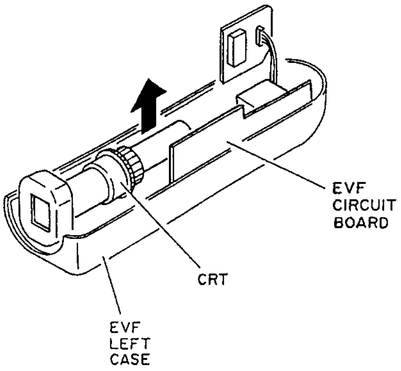

EVF CIRCUIT BOARD
CRT
EVF LEFT CASE

Fig. 2-154

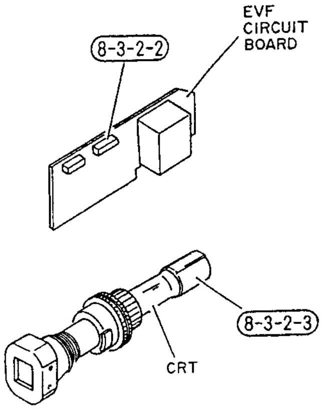

8-3-2-2
EVF CIRCUIT BOARD
8-3-2-3
CRT

Fig. 2-155

8-4. EVF Cable

ORDER FOR REMOVING PARTS	ITEM No.
· EVF Shoe	8-1
· EVF Lens Block, EVF Right Case	8-2

1) Insert a flat head screwdriver between the EVF right case and EVF cable holder (2) and pry it in the direction of the arrow. Be careful that the EVF cable holder (2) and EVF cable are not damaged at this time. (See Fig. 2-156)
2) Remove the EVF cable from the EVF right case.
3) Release two (2) tabs of EVF cable holder (3) from the exterior of the EVF right case. (See Fig. 2-157)
4) Remove the EVF cable from the EVF cable holder (3) and move it to the exterior of the EVF right case. (See Fig. 2-158)

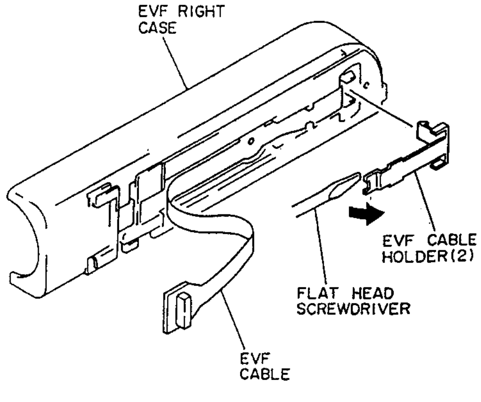

EVF RIGHT CASE
EVF CABLE HOLDER(2)
FLAT HEAD SCREWDRIVER
EVF CABLE

Fig. 2-156

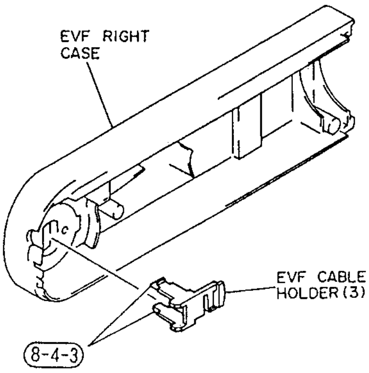

EVF RIGHT CASE
EVF CABLE HOLDER(3)
8-4-3

Fig. 2-157

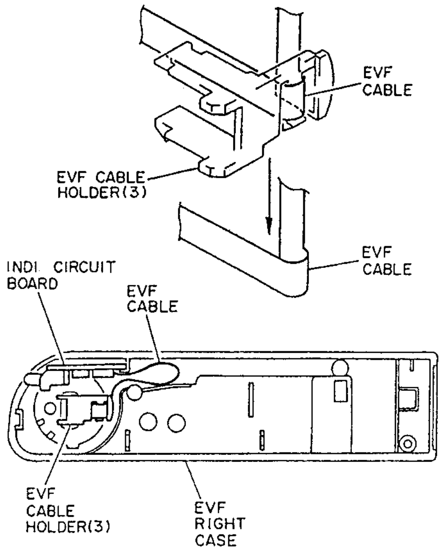
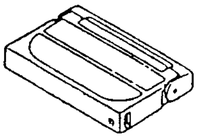
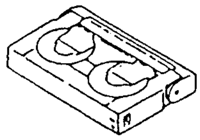
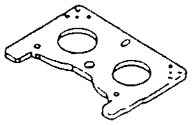
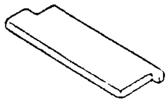
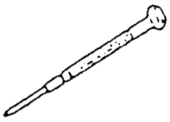
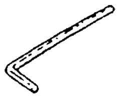
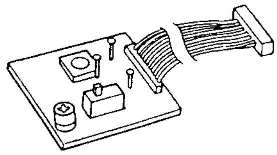
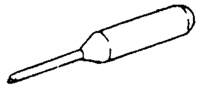
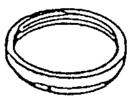
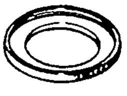
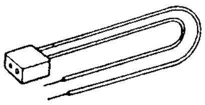
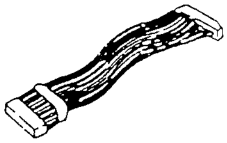
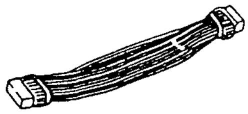
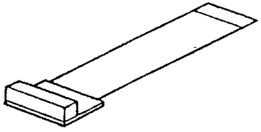
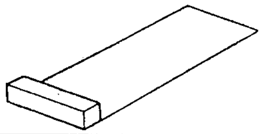
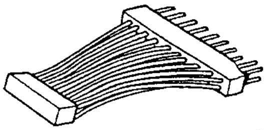
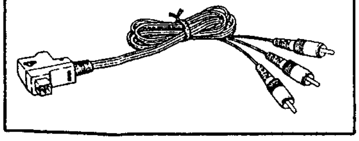

EVF CABLE
EVF CABLE HOLDER(3)
EVF CABLE
INDI CIRCUIT BOARD
EVF CABLE
EVF CABLE HOLDER(3)
EVF RIGHT CASE

Fig. 2-158

JIG AND TAPES FOR ADJUSTMENT

1. ALIGNMENT TAPE COLOUR BAR/400Hz (20HSC-3) No. 7099232 	2. CASSETTE TORQUE METER SRK-8T-232: No. 7099236 SRK-8T-212: No. 7099402 	3. MASTER PLANE No. 7099237 	4. REEL DISK HEIGHT JIG No. 7099238 
5. SPECIAL DRIVER No. 7099239 	6. 0.7mm HEXAGONAL WRENCH No. 7099316 	7. ATF ADJ. JIG No. 7099386 	8. BACKFOCUS ADJ. DRIVER No. 7099370 
9. LIGHT BALANCING FILTER C12, C2 (46mmφ) C12 : No. 7099369 C2 : No. 7099376 	10. STEP-UP RING (37mmφ → 46mmφ) No. 7029086 	11. 2-PIN EXTENSION CABLE No. 7099283 	12. 24-PIN EXTENSION CABLE No. 7099387 
13. 8-PIN EXTENSION CABLE No. 7099388 	14. 16-PIN EXTENSION CABLE No. 7099390 	15. 21-PIN EXTENSION CABLE No. 7099397 	16. 10-PIN EXTENSION CABLE No. 7099391 
17. AV INPUT CABLE No. 5860771 			

HOW TO USE THE NEW JIGS AND TOOLS

No.	NAME OF JIG & TOOLS	PARTS No.	HOW TO USE (PURPOSE OF USE)
1	ALIGNMENT TAPE (20HSC-3)	7099232	· Alignment tape for 8mm VCRs. (Video Signal: Colour, Audio Signal: 400Hz)
2	CASSETTE TORQUE METER (SRK-8T-232)	7099236	· Cassette Torque meter for 8mm VCRs. · Can measure only the tension torque. (measurement range: 0 ~ 50 g-cm)
	CASSETTE TORQUE METER (SRK-8T-212)	7099402	· Cassette Torque meter for 8mm VCRs. · Can measure only the tension and play torques. (measurement range: 0 ~ 10 g.cm)
3	MASTER PLANE	7099237	· Master plane for 8mm VCRs.
4	REEL DISK HEIGHT JIG	7099238	· Height adjustment jig for 8mm VCRs.
5	SPECIAL DRIVER	7099239	· Screwdriver exclusively used to adjust the height of the guide roller.
7	ATF ADJ. JIG	7099386	· Switches the auto tracking adjustment to manual. · Sets the VCR block to the test mode.
9	C2 LIGHT BALANCING FILTER (46mmφ)	7099376	· Used to adjust the camera block. · When this is combined with a C12 filter to make a C14 filter and attached over the lens, and the camera is pointed at 3100 K light box (chart), the same effect as when the camera is pointed at a 5700 K light box (chart) is obtained.
11	2-PIN EXTENSION CABLE	7099283	· For power supply. (red: positive, brown: negative) · Power supply cable after the case removed.
12	24-PIN EXTENSION CABLE	7099387	· Installed between the main and process circuit boards. · Used when the camera and VCR blocks are separated to adjust, etc.
13	8-PIN EXTENSION CABLE	7099388	· Installed between the DC-DC converter and process circuit board. · Used when the camera and VCR blocks are separated to adjust, etc.
14	16-PIN EXTENSION CABLE	7099390	· Installed between the trouble sensors in the mechanical block and process circuit board. · Used when the main circuit board is removed from the mechanical block to adjust, etc.
15	21-PIN EXTENSION CABLE	7099397	· Installed between the control switch and process circuit board. · Used to check control switch operations after removing the camera block from the left case.
16	10-PIN EXTENSION CABLE	7099391	· Used to adjust the camera block. · Insert the plug with the smaller pin intervals into the test connector on the process circuit board to use is as a test point (TP1201 in camera block adjustments).
17	AV INPUT CABLE	5860771	· Used to adjust the VCR block.

MEMO

CHAPTER 3
MECHANISM ADJUSTMENT

1. BEFORE STARTING ADJUSTMENT

- Remove the components shown in the table below beforehand, referring to the CHAPTER 2 DISASSEMBLY.

ORDER FOR REMOVING PARTS	*ITEM No.*
· Electronic Viewfinder (EVF)	1-1
· Cassette Lid, Microphone	1-2
· Separating the Camera section and VCR Section	1-3
· Right Case, VCR Block	3-1

- The mechanism adjustment can only be done in the VCR block. Supply power by the following procedure when adjusting the transport system.
  1) Set the OPERATE switch "VTR" position.
  2) Connect the ATF jig to CN614 on the main circuit board.
  3) Supply power while depressing the F.FWD (fast forward) button on the function switch.
  4) Press the STOP button on the function switch.

Note: Set SW1 on the ATF jig to "OFF" position. Do the work with the ATF jig attached.

- To set the unit to the play mode without loading a cassette, shut off the light from the END LED on the sub chassis completely and press the PLAY button on the function switch.

2. PHASE MATCHING IN ASSEMBLY (Figs. 3-1, 3-2, 3-3)

Be sure to match the phases when reinstalling the loading motor, mechanism state switch, loading gear (1), (2) and (3), supply brake gear, supply loading cam gear and take-up loading cam gear.

Note: Set the 8mm camera/recorder to the eject state for phase matching in assembly.
Do not reuse the washers which were removed.

REINSTALLING PROCEDURE:

1) Align marks (A) and (A') on the mechanism state switch and marks (B) and (B') on the rotor. (See Fig. 3-1)
2) Reinstall the components into the main chassis in the condition after step 1). Align mark (C)and the loading gear (3) and mark (A) on the mechanism state switch at this time. (See Fig. 3-2)
3) Reinstall the supply loading cam gear into the main chassis so that mark (E) on the supply brake gear and mark (F) on the supply loading cam gear are aligned. (See Fig. 3-2)
   Check that mark (A') on the mechanism state switch and mark (D) on the supply loading cam gear are aligned.
4) Reinstall the take-up loading cam gear so that hole (G) in the gear is aligned with the hole in the main chassis. (See Fig. 3-3)

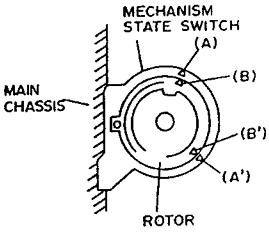

MECHANISM STATE SWITCH
(A)
(B)
MAIN CHASSIS
(B')
(A')
ROTOR

Fig. 3-1

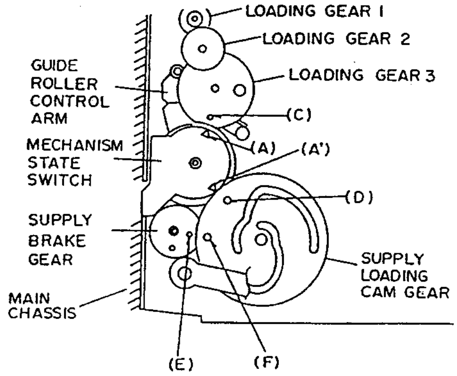

LOADING GEAR 1
LOADING GEAR 2
LOADING GEAR 3
GUIDE ROLLER CONTROL ARM
(C)
MECHANISM STATE SWITCH
(A)
(A')
(D)
SUPPLY BRAKE GEAR
SUPPLY LOADING CAM GEAR
MAIN CHASSIS
(E)
(F)

Fig. 3-2

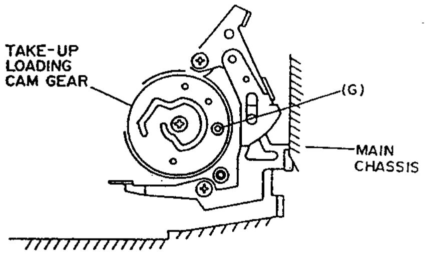

TAKE-UP LOADING CAM GEAR
(G)
MAIN CHASSIS

Fig. 3-3

3. SUB CHASSIS SLIDE AMOUNT ADJUSTMENT (Figs. 3-4, 3-5, 3-6, 3-7)

Be sure to perform this adjustment when attaching the sub chassis to the main chassis.

PURPOSE :	*FAULT DUE TO INCOMPLETE ADJUSTMENT:*
To set the amount by which the sub chassis slides.	Tape is not loaded normally.

TEST EQUIPMENT/JIG	*STATE OF VCR*	*TEST POINT*	*ADJUSTMENT POINT*
	Shut off the light to the END LED to set the unit to the play mode without loading a cassette.		Sub chassis slide stopper.

ADJUSTMENT PROCEDURE:

1) Loosen two (2) screws holding the sub chassis slide stopper. (See Fig. 3-4)
2) Push in the sub chassis in the direction of the cylinder.
   Push in both ends of the sub chassis simultaneously with even force.
3) Set the sub chassis slide stopper to the following position. (See Fig. 3-5)
   ① When viewed from the top of the cylinder, the right screw holding the sub chassis slide stopper should be aligned with the top of the hole in the stopper.
   ② The left screw holding the sub chassis slider stopper should be set to the centre of the hole in the stopper.
4) Tighten two (2) screws holding the sub chassis slide stopper in the condition after step 3).

Note: After adjustment is completed, check the following.
① Check that the gap between the take-up guide roller rail and guide roller relay rail (1) is within 0.3mm. (Use the 0.25mm washer used in the mechanical block to make checking easier.) (See Fig. 3-6)
② Press the eject button to set the unit to eject and check that the distance between the screw (holding the sub chassis) on the shaft of the mechanism state switch and the end of the sub chassis is within 1.5mm. (See Fig. 3-7)

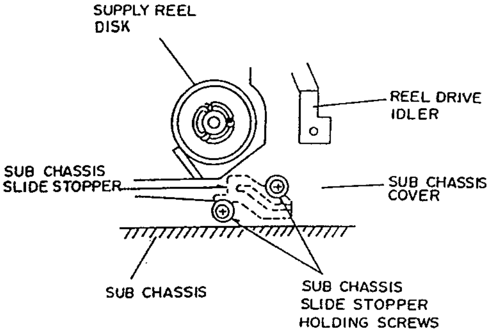

SUPPLY REEL DISK
REEL DRIVE IDLER
SUB CHASSIS SLIDE STOPPER
SUB CHASSIS COVER
SUB CHASSIS
SUB CHASSIS SLIDE STOPPER HOLDING SCREWS

Fig. 3-4

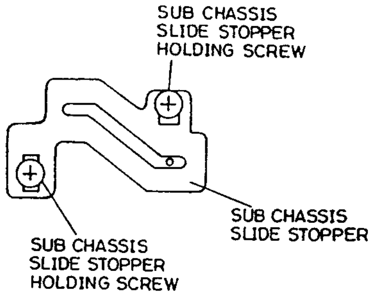

SUB CHASSIS SLIDE STOPPER HOLDING SCREW
SUB CHASSIS SLIDE STOPPER
SUB CHASSIS SLIDE STOPPER HOLDING SCREW

Fig. 3-5

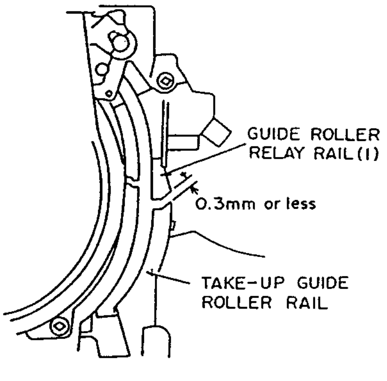

GUIDE ROLLER RELAY RAIL(1)
0.3mm or less
TAKE-UP GUIDE ROLLER RAIL

Fig. 3-6

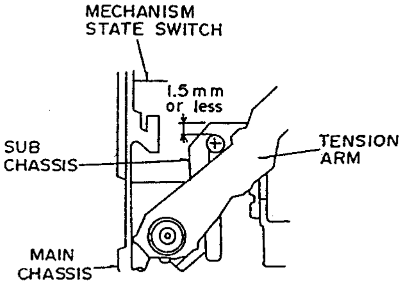

MECHANISM STATE SWITCH
1.5mm or less
SUB CHASSIS
TENSION ARM
MAIN CHASSIS

Fig. 3-7

4. TAPE TRANSPORT SYSTEM CHECK/ADJUSTMENT

The tape transport system is the path from the supply reel disk to the take-up reel disk via the cylinder. The tape transport components, especially the components which come into direct contact with the tape, should be kept clean without damage, dust and oil, etc. adhering to the contact surfaces.

The tape transport system is adjusted before shipment from the factory, so perform adjustments only when the transport are replaced or transport system adjustments have drifted. Do not reuse washers which have been removed.

4-1. REEL DISK HEIGHT ADJUSTMENT (Fig. 3-8)

Be sure to perform this adjustment after reinstalling the supply or take-up reel disk.

PURPOSE :		*FAULT DUE TO INCOMPLETE ADJUSTMENT:*	
To set the reel disk height to the specified value.		Tape is not loaded normally.	
TEST EQUIPMENT/JIG	*STATE OF VCR*	*TEST POINT*	*ADJUSTMENT POINT*
· Master Plane · Reel Disk Height Jig	· Shut off the light from the END LED. · Mount the master plane, set the unit to the play mode and then the stop mode.		

ADJUSTMENT PROCEDURE:

Note: Use the same procedure for the supply and take-up sides.

1) Fit the reel disk height jig to the reel disk as shown in Fig. 3-8.
2) Adjust the washer (thickness: 0.25mm) at the bottom of the reel disk so that (C) of the reel disk is between (A) and (B) of the reel disk height jig.

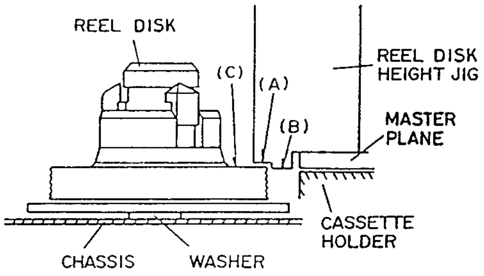

REEL DISK
(C)
(A)
(B)
REEL DISK HEIGHT JIG
MASTER PLANE
CASSETTE HOLDER
CHASSIS
WASHER

Fig. 3-8

4-2. TENSION POLE POSITION ADJUSTMENT (Fig. 3-9)

Be sure to perform this adjustment after reinstalling the tension arm, tension band and supply reel disk.

PURPOSE :		*FAULT DUE TO INCOMPLETE ADJUSTMENT:*	
To set the tape tension to the specified value.		Tape is not loaded normally.	
TEST EQUIPMENT/JIG	*STATE OF VCR*	*TEST POINT*	*ADJUSTMENT POINT*
	Shut off the light from the end LED and set the play mode without loading a cassette.		

ADJUSTMENT PROCEDURE:

1) Set the tension spring to position (C) on the tension spring holder.
2) After loading is completed, loosen screw (A) holding the tension band holder.
3) Adjust the position of the tension band holder so the left of the hole in supply guide roller (3) is aligned with the inner flange of the tension arm.
4) After adjustment is completed, tighten screw (E).

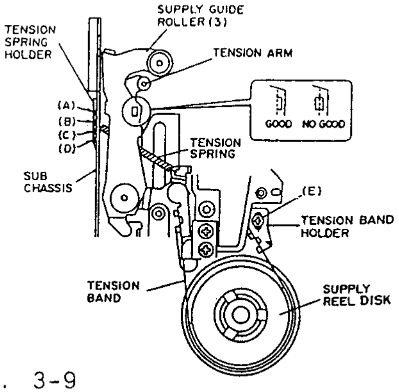

SUPPLY GUIDE ROLLER (3)
TENSION SPRING HOLDER
TENSION ARM
(A)
(B)
(C)
(D)
GOOD
NO GOOD
TENSION SPRING
SUB CHASSIS
(E)
TENSION BAND HOLDER
TENSION BAND
SUPPLY REEL DISK

Fig. 3-9

4-3. TENSION ADJUSTMENT (Fig. 3-9)

Be sure to perform this adjustment after reinstalling the tension arm, tension band and supply reel disk.

PURPOSE : To set the tape tension to the specified value.		*FAULT DUE TO INCOMPLETE ADJUSTMENT*: Tape is not loaded normally.	
TEST EQUIPMENT/JIG	*STATE OF VCR*	*TEST POINT*	*ADJUSTMENT POINT*
· Cassette Torque Meter (SRK-8T-212)			

ADJUSTMENT PROCEDURE:

1) Set the tension spring to section (C) of the tension spring holder. (See Fig. 3-9)
2) Load the cassette torque meter and set the unit to the play mode.
3) Adjust the position of the tension spring so the tension on the supply side is 3.5 ~ 4.5 g-cm.
   ① If the tension is higher than 4.5 g-cm, hook the tension spring to section (B) or (A) of the tension spring holder.
   ② If the tension is lower than 3.5 g-cm, hook the tension spring holder.

Note: If the tension is changed greatly (2 g-cm or more) in this adjustment, readjust the tension pole position and tension. (If the above specifications are not satisfied, the tension band or tension spring is faulty.)

4-4. SUPPLY GUIDE ROLLER (2) HEIGHT ADJUSTMENT (Figs. 3-10, 3-11, 3-12)

Be sure to ckeck and adjust the height of supply guide roller (2) after reinstalling it.

Note: The supply guide roller (2) is specified as a service part while it is assembled with the guide roller base. Since it is coarsely adjusted before the unit is shipped from the factory, do not adjust its height unnecessarily.

PURPOSE : To set height relative to the cylinder.		*FAULT DUE TO INCOMPLETE ADJUSTMENT*: The play back picture distorted.	
TEST EQUIPMENT/JIG	*STATE OF VCR*	*TEST POINT*	*ADJUSTMENT POINT*
· Blank Tape · Alignment Tape · Oscilloscope · ATF Jig	Connect the ATF jig to CN614 on the main circuit board. (SW1:OFF)	TP1 (SW25) ATF TP2 (GND) ATF TP3 (FM OUT) ATF CN614 MAIN	

ADJUSTMENT PROCEDURE:

1) Load a blank tape and set the unit to the play mode.
2) Check that no curling or creasing of tape occurs around supply guide roller (2). If curling or cresing occurs, turn the top of supply guide roller (2) using a flat-bladed screwdriver, etc. to fine adjust its height. (Fig. 3-12)
3) Connect an oscilloscope to TP3 on the ATF jig. (Fig. 3-10)
4) Trigger the oscilloscope with TP1 (SW25) on the ATF jig.
5) Load the alignment tape while was fully rewound and set the unit to the forward search mode.
6) Turn the top of supply guide roller (2) using a flat-bladed screwdriver, etc. to lower it until the rhombic FM waveform is not flat. (Fig. 3-11)
7) Turn the top of supply guide roller (2) in the opposite direction to that in step 6) so the rhombic FM waveform is flat.

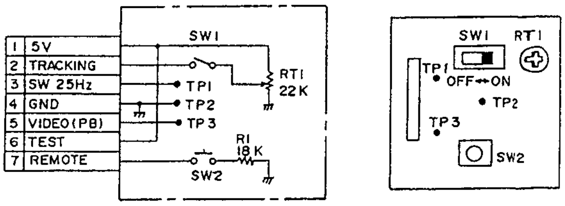


Fig. 3-10

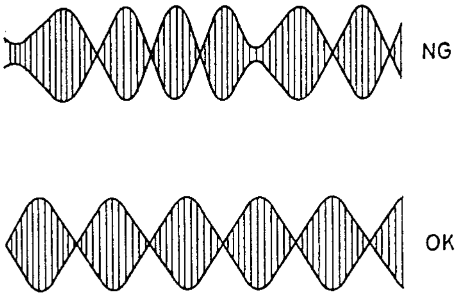


Fig. 3-11

4-5. TAKE-UP GUIDE POLE/TAKE-UP GUIDE POST HEIGHT ADJUSTMENT (Figs. 3-12, 3-13)

Be sure to perform this adjustment after reinstalling the take-up guide pole and capstan motor.

Note: The take-up guide post is specified as a service part while it is assembly with the capstan motor. Since it is coarsely adjusted before the unit is shipped from the factory, do not adjust its height unnecessarily.

PURPOSE : To set height relative to the cylinder.		*FAULT DUE TO INCOMPLETE ADJUSTMENT:* The play back picture distorted.	
TEST EQUIPMENT/JIG	*STATE OF VCR*	*TEST POINT*	*ADJUSTMENT POINT*
· Blank Tape			

ADJUSTMENT PROCEDURE:

1) Load a blank tape and set the unit to the play mode.
2) Adjust screw (A) on the capstan motor so the tape travels at the centre of the middle pole. Check that no curling or creasing occurs around the take-up guide post. If curling or creasing occurs, turn the top of the take-up guide post using a special driver to fine adjust its height. (Figs. 3-12, 3-13)
3) Turn the top of the take-up guide pole using a special driver to adjust its height so the tape travels at the centre of the take-up guide pole.
4) Repeat reverse search and play and turn screw (B) on the capstan motor to adjust the inclination of the capstan motor so the variations in the height of tape are within the upper and lower flanges of the take-up guide pole.
5) Adjust screw (A) on the capstan motor so the tape travels at the centre of the middle pole during play. Be careful that the tension of tape between the take-up guide roller and middle pole is not too high (the tape should be slightly slack).
6) Turn the top of the take-up guide pole using a special driver to adjust its height so the tape travels at the centre of the take-up guide pole during play.
7) Load a blank tape which was fully rewound and set the unit to the play mode. Turn the top of the take-up guide post using a special driver to lower it so that curling occurs at the lower flange of the take-up guide post.
8) Turn the top of the take-up guide post in the opposite direction to that in step 7) so that no curling occurs.

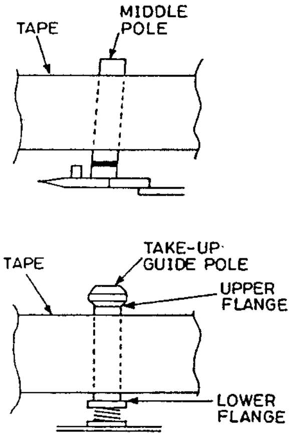

TAPE
MIDDLE POLE
TAPE
TAKE-UP GUIDE POLE
UPPER FLANGE
LOWER FLANGE

Fig. 3-12

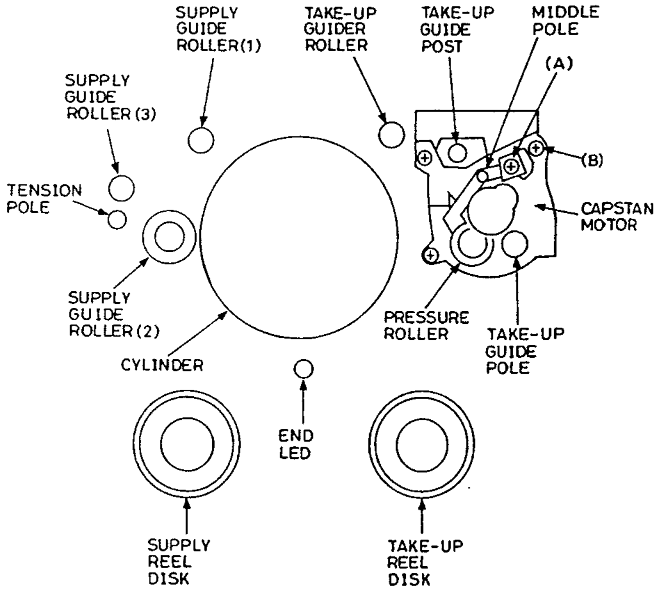
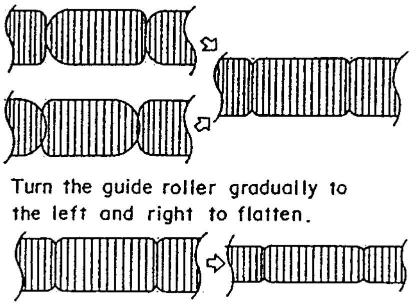

SUPPLY GUIDE ROLLER(1)
TAKE-UP GUIDER ROLLER
TAKE-UP GUIDE POST
MIDDLE POLE
(A)
SUPPLY GUIDE ROLLER (3)
(B)
TENSION POLE
CAPSTAN MOTOR
SUPPLY GUIDE ROLLER (2)
PRESSURE ROLLER
TAKE-UP GUIDE POLE
CYLINDER
END LED
SUPPLY REEL DISK
TAKE-UP REEL DISK

Fig. 3-13

4-6. Supply Guide Roller (1)/Take-up Guide Roller Height Adjustment (Figs. 3-10, 3-13, 3-14)

Be sure to perform this adjustment after reinstalling the supply guide roller (1) and take-up guide roller.

Note: The supply guide roller (1) and take-up guide roller are specified as service parts while they are assembled with their guide roller bases. Since they are coarsely adjusted before the unit is shipped from the factory, do not adjust their heights unnecessarily.

<table>
<tr><td colspan="2"><i>PURPOSE :</i>
To set height relative to the cylinder.</td><td colspan="2"><i>FAULT DUE TO INCOMPLETE ADJUSTMENT:</i>
The play back picture distorted.</td></tr>
<tr><td><i>TEST EQUIPMENT/JIG</i></td><td><i>STATE OF VCR</i></td><td><i>TEST POINT</i></td><td><i>ADJUSTMENT POINT</i></td></tr>
<tr><td>· Blank Tape
· Alignment Tape
· Oscilloscope
· ATF Jig</td><td>Connect the ATF jig to CN614 on the main circuit board.
(SW1: off, RT1: its mechanical centre.)</td><td>· TP1 (SW25) ATF
· TP2 (GND) ATF
· TP3 (FM OUT) ATF
· CN614 MAIN</td><td></td></tr>
<tr><td colspan="2"><i>ADJUSTMENT PROCEDURE:</i>
1) Load a blank tape and set the unit to the play mode.
2) Check that no curling or creasing of tape occurs around supply guide roller (1) and the take-up guide roller. If curling or creasing occurs, turn the tops of supply guide roller (1) and the take-up guide roller using a special driver to fine adjust their heights. (Fig. 3-13)
3) Connect an oscilloscope to TP3 on the ATF jig. (Fig. 3-10)
4) Trigger the oscilloscope with TP1 (SW25) on the ATF jig.
5) Load the alignment tape which was fully rewound and set the unit to the play mode.
6) Check that the FM output waveform at TP3 is flat. Set SW1 on the ATF jig to ON and turn RT1 to the left and right to check that the FM output level drops at an equal angle on the left and right. (Fig. 3-14)
7) If the specification in step 6) cannot be confirmed, turn the tops of supply guide roller (1) and the take-up guide roller using a special driver to adjust their heights so the specification in step 6) can be satisfied.</td><td colspan="2">
Turn the guide roller gradually to the left and right to flatten.
RT1 on ATF switch board : Turn RT1 on ATF switch board to the left and right.
Fig. 3-14</td></tr>
</table>

5. ADJUSTMENT AFTER REPLACING THE CYLINDER (Figs. 3-10, 3-15)

When the cylinder is replaced, the height relative to the guide roller drifts, therefore the tape transport system should be adjusted.
Check and adjust in the following order.

<table>
<tr><td colspan="2"><i>PURPOSE :</i>
To set the relative height of the guide rollers.</td><td colspan="2"><i>FAULT DUE TO INCOMPLETE ADJUSTMENT:</i>
The played back picture is distorted.</td></tr>
<tr><td><i>TEST EQUIPMENT/JIG</i></td><td><i>STATE OF VCR</i></td><td><i>TEST POINT</i></td><td><i>ADJUSTMENT POINT</i></td></tr>
<tr><td>· Blank Tape
· Alignment Tape
· Oscilloscope
· ATF Jig</td><td>Connect the ATF jig to CN614 on the main circuit board .
(SW1: off, RT1: its mechanical centre.)</td><td>· TP1 (SW25) ATF
· TP2 (GND) ATF
· TP3 (FM OUT) ATF
· CN614 Main</td><td></td></tr>
</table>

ADJUSTMENT PROCEDURE:

1) Load a blank tape and set the unit to the play mode.
2) Check that no curling or creasing of the tape occurs around the guide rollers. If curling or creasing of the tape occurs, fine adjust the height of the guide rollers by the following procedure.
3) Load an alignment tape and set the unit to the play mode.
4) Connect an oscilloscope to TP3 on the ATF jig.
5) Trigger the oscilloscope with TP1 (SW25) on the ATF jig.
6) Adjust voltage level control on the oscilloscope to set the maximum amplitude of the FM output to 4 graduations. (Fig. 3-15)
   Check that the FM output is flat at this time. Set SW1 on the ATF jig to ON and adjust RT1 to set the maximum amplitude of the FM output to 3 graduations. Check that the minimum amplitude is set to 1.8 graduations or more.
7) If the specifications in step 6) cannot be confirmed, adjust the heights of the supply and take-up guide rollers so the specifications are satisfied.
8) Perform the following electrical adjustments referring to CHAPTER 4.
   - Setting the Head Switching Point
   - Playback Luminance Signal Level Adjustment
   - Record Luminance Signal Level Adjustment
   - Record Chroma Signal Level Adjustment

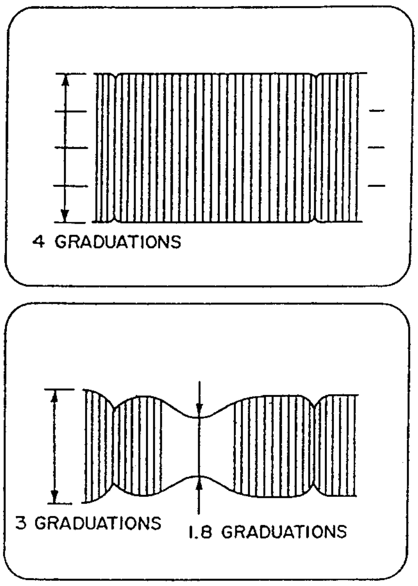


Fig. 3-15

6. CHECKING THE TORQUE

There are two (2) types of the cassette torque meter. Choose the one applicable for measurement to be performed.

- SRK-8T-232: Cannot measure only the tension torque.
- SRK-8T-212: Can measure only the tension and play torques.

ITEM	*VCR MODE*	*MEASURED REEL DISK*	*TORQUE VALUE*	*TORQUE CASSETTE USED*
Take-up Torque	Play	Take-up	7 ~ 11 g-cm	SRK-8T-212
Rewind Torque	Reverse search to stop	Supply	20 ~ 34 g-cm	SRK-8T-232
Take-up Brake Torque	Forward search to stop	Take-up	7 ~ 11 g-cm	SRK-8T-212

CHAPTER 4
ELECTRICAL ADJUSTMENT

1. CONNECTION FOR ADJUSTMENT

Remove the components, etc. listed below first, referring to CHAPTER 2 DISASSEMBLY. (See Fig. 4-1)

ORDER FOR REMOVING PARTS	*ITEM No.*
· Electronic Viewfinder (EVF)	1-1
· Cassette Lid, Microphone	1-2
· Separating the Camera Section and VCR Section	1-3
· Process Circuit Board, Sensor Sensor Circuit Board, Lens Block	2-1

Note 1: When the EVF is removed, no operation mode will be displayed on the monitor screen.

Note 2: Remove the above components from the left case and reassemble them so that the adjustments can be performed.

Note 3: Adjustments other than "subcarrier frequency confirmation", "VCO lock voltage confirmation", "sensor driver pulse frequency adjustment" and "backfocus adjustment" can be done without removing the left case.

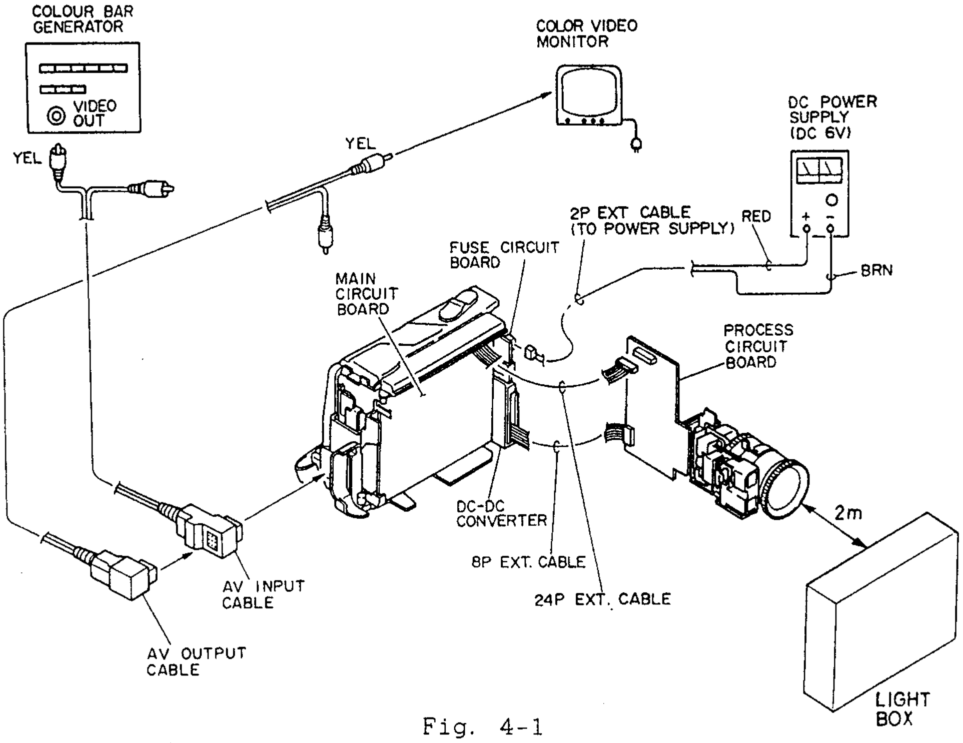

COLOUR BAR GENERATOR
VIDEO OUT
YEL
YEL
COLOR VIDEO MONITOR
DC POWER SUPPLY (DC 6V)
+
-
2P EXT CABLE (TO POWER SUPPLY)
RED
BRN
FUSE CIRCUIT BOARD
MAIN CIRCUIT BOARD
PROCESS CIRCUIT BOARD
DC-DC CONVERTER
8P EXT. CABLE
24P EXT. CABLE
2m
AV INPUT CABLE
AV OUTPUT CABLE
LIGHT BOX

Fig. 4-1

2. CAMERA SECTION ADJUSTMENT

2-1. CIRCUIT BOARD LOCATIONS

1. Process Circuit Board
2. Sensor Circuit Board
3. Autofocus Circuit Board

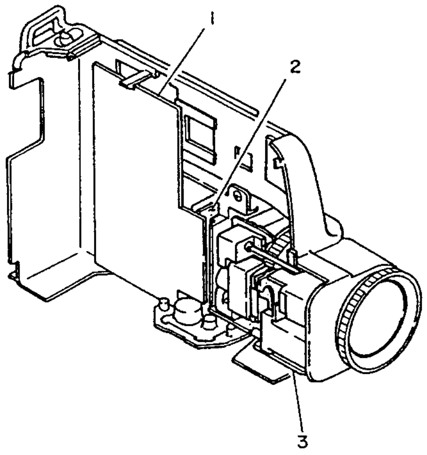


Fig. 4-2

2-2. TEST EQUIPMENT AND CHARTS NECESSARY FOR ADJUSTMENT

- Test Equipment
  - Oscilloscope (dual trace)
  - (Vectorscope)
  - Digital Voltmeter (DVM)
  - Frequency Counter
  - Colour Video Monitor
- Charts, etc.
  - Gray Scale Chart
  - Colour Bar Chart
  - Resolution Chart
  - Backfocus Adjustment Chart
  - Light Box (3100°K)
  - Light Balancing Filter (C14 = C12 + C2)
  - Step-up Ring (37mmϕ → 46mmϕ)
  - DC Power Supply (DC 6V)
  - DC Power Supply (DC 0 ~ 5V)
  - Backfocus Adjustment Driver

2-3. ADJUSTMENT CONDITION

1) Check that the VCR section has been adjusted correctly before adjusting the camera section
2) Connect this unit, a power supply and a colour video monitor as shown in Fig. 4-1.

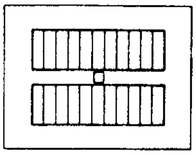
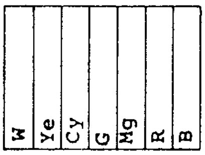
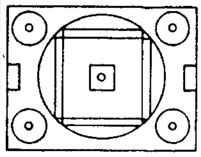
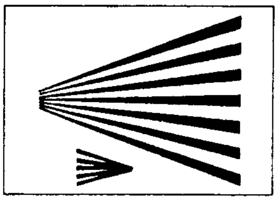
3) Place the chart (light box) 2m away from the camera (lens surface) when otherwise not specified.
4) Point the camera at the chart to fill the video period when otherwise not specified.
5) Use the 10:1 probe of the oscilloscope when other not specified.
6) When "Trigger the oscilloscope internally" is specified, set the time base of the oscilloscope to 10μs/div.
7) When using the VIDEO OUT (AV OUT) to perform adjustment, be sure to terminate the AV OUT jack with 75 ohm.

2-4. PRESET POSITION OF SWITCHES AND CONTROLS DURING ADJUSTMENT

- OPERATE switch .... "CAM" position
- POWER SAVE switch .... "NORMAL" position
- FOCUS switch .... "MANUAL" position
- SHUTTER SPEED .... "1/50"

2-5. LIST OF CHARTS FOR CAMERA ADJUSTMENT

Table 4-1

Gray Scale Chart	Colour Bar Chart	Resolution Chart
		
Backfocus Adjustment Chart		

2-6. ADJUSTMENTS AFTER REPLACING MAJOR COMPONENTS IN THE CAMERA BLOCK

After replacing major components, perform adjustments, referring to the table below. The following table shows the minimum adjustments required after major components are replaced.
The table below may not apply when several components are replaced, depending on the symptom of the defect.

ITEM	NAME OF ADJUSTMENT	NAME OF MAJOR COMPONENTS					
		Sensor C. B. A	IC1001	Process C. B. A	IC1202	IC1203	IC1204
(1)	Sub Carrier Frequency Confirmation			●			
(2)	VCO Lock Voltage Confirmation			●			
(3)	Sensor Drive Pulse Lock Voltage Adjustment			●	●		
(4)	Backfocus Adjustment	●	●				
(5)	Sensor Sub Voltage Adjustment	●	●	●			
(6)	Luminance Setup level Adjustment	●	●	●		●	●
(7)	AIC level Adjustment	●	●	●		●	
(8)	Matrix Adjustment	●	●	●	●	●	●
(9)	White Balance Hold Voltage Setting	●	●	●	●	●	●
(10)	R-Y/B-Y Setup Adjustment	●	●	●	●	●	●
(11)	White Balance Adjustment	●	●	●	●	●	●
(12)	Chroma Level Adjustment	●	●	●	●	●	●
(13)	Program AE Adjustment			●			

ITEM	*NAME OF ADJUSTMENT*	*NAME OF MAJOR COMPONENTS*					
		IC1205	IC1206	IC1207	IC1208	IC1210 IC1214	IC1211
(1)	Sub Carrier Frequency Confirmation						●
(2)	VCO Lock Voltage Confirmation						●
(3)	Sensor Drive Pulse Lock Voltage Adjustment						●
(4)	Backfocus Adjustment						
(5)	Sensor Sub Voltage Adjustment						
(6)	Luminance Setup level Adjustment		●			●	●
(7)	AIC level Adjustment		●	●		●	●
(8)	Matrix Adjustment	●					
(9)	White Balance Hold Voltage Setting	●	●			●	●
(10)	R-Y/B-Y Setup Adjustment	●	●			●	●
(11)	White Balance Adjustment	●	●			●	●
(12)	Chroma Level Adjustment	●	●	●		●	●
(13)	Program AE Adjustment				●		

Note: After replacing IC1901, be sure to perform "Setting the Head Switching Point" and "Setting the Power Shut Off Level" in VCR adjustment.

2-7. CAMERA ADJUSTMENT

(1) Subcarrier Frequency Confirmation (Fig. 4-51)

PURPOSE	Confirm the subcarrier frequency before starting camera adjustment.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·IC1211-3 PC ·TP1201-1 PC (GND)			·Frequency Counter	8.867238MHz ± 60Hz

Note: Basically, it is not necessary to adjust the subcarrier frequency. Be sure to check the frequency before adjustment, and adjust to only when it is drifted.

1) Connect the frequency counter to IC1211-3.
2) Confirm that the frequency is 8.867238MHz ± 60Hz. If the frequency is drifted, adjust the trimmer capacitor-1 on IC1211 for 8.867238MHz ± 60Hz.

(2) VCO Lock Voltage Confirmation (Fig. 4-51)

PURPOSE	This adjustment sets the camera drive pulse lock voltage to the specified value.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·IC1211-4 PC ·TP1201-1 PC (GND)			·DVM	2.5V ± 0.1V

Note: Basically, it is not necessary to adjust the VCO lock voltage. Be sure to check the voltage before adjustment, and adjust to only when it is drifted.

1) Connect the DVM to IC1211-4.
2) Confirm that the voltage is 2.5V ± 0.01V. If the voltage is drifted, adjust the trimmer capacitor-2 on IC1211 for 2.5V ± 0.01V.

(3) Sensor Drive Pulse Lock Voltage Adjustment (Fig. 4-51)

PURPOSE	This adjustment sets the sensor drive pulse lock voltage to the specified value.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP1201-8 PC ·TP1201-1 PC (GND)	·CT1201 PC (DRIVE PULSE LOCK VOLTAGE)		·DVM ·Non-Metallic Adj Driver	2.5V ± 0.1V

1) Connect the DVM to TP1201-8.
2) Adjust CT1201 for 2.5V ± 0.1V.

Note: Remove the left case. Be careful when applying an adjustment driver to CT1201 because the stray capacitance the driver may vary.

(4) Backfocus Adjustment (Fig. 4-3)

PURPOSE	The purpose of this adjustment is to ensure proper focus tracking throughout the zoom range.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	Relay Lens	Position the camera section 2 meters from the backfocus chart and illuminated the object with approx. 100 lux.	·Backfocus Adj. Driver ·Backfocus Adj. Chart ·Colour Video Monitor	Same value between real distance and index on the ring.

1) Set the zoom to wide-angle and set the index on the focus ring to two (2) meters.
2) Loosen the relay lens lock screw.
3) Insert the backfocus adjustment driver into the backfocus adjustment point and turn it to the left and right to optimize the focus.
4) Set the zoom to telephoto end and confirm that the chart is in focus. If it is not focused, set the zoom to wide-angle and readjust step 3.
5) Confirm that the chart is approximately in focus at the both the wide-angle and telephoto ends with the focus ring set to two (2) meters.

Note: Adjust without assembling into the left case.
After adjustment is completed, tighten the relay lens lock screw with the backfocus adjustment driver inserted into the adjustment point (holding the backfocus driver by hand) so that the adjusted position will not drift.

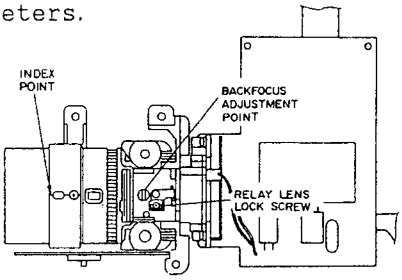


Fig. 4-3

(5) Sensor Sub Voltage Adjustment (Figs. 4-4, 4-51)

PURPOSE	This adjustment prevents vertical blooming.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·RT1201 PC (SENSOR SUB VOLTAGE)	Point the camera at a 40W to 60W incandescent lump 1 meter away.	·Colour Video Monitor	

1) Adjust RT1201 so that the band of blooming appearing in the vertical direction of the monitor screen just disappears.

Note: Stop RT1201 where blooming disappears and be careful not to turn it too for.
Check that no roughness is present in the very bright section of the lamp.

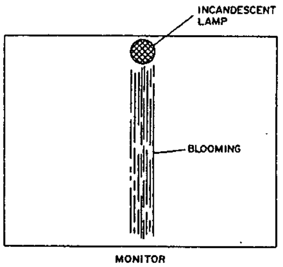


Fig. 4-4

(6) Luminance Setup Level Adjustment (Figs. 4-5, 4-51)

PURPOSE	This adjustment sets the brightness of the picture.				
TEST POINTS	*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·Video Out (AV OUT)	·RT1213 (LUMA SETUP)	PC	Cap the lens	Oscilloscope	40mV ± 10mVp-p

1) Connect the oscilloscope to video out (AV OUT).
2) Trigger the oscilloscope internally.
3) Adjust RT1213 for 40mV ± 10mVp-p from the blanking level to the centre of the black level.

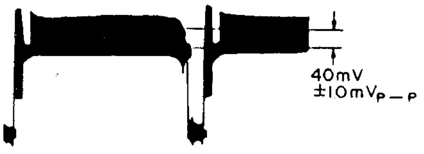


Fig. 4-5

(7) AIC Level Adjustment (Fig. 4-6, 4-51)

PURPOSE	This adjustment sets the balance point of the auto iris control.				
TEST POINTS	*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·Video Out (AV OUT)	·RT1209 (AIC)	PC	Aim the gray scale chart.	·Oscilloscope	700mV ± 20mVp-p

1) Connect the oscilloscope to video out (AV OUT).
2) Trigger the oscilloscope internally.
3) Adjust RT1209 for 700mV ± 20mVp-p from the blanking level to the centre of the white level on the gray scale.

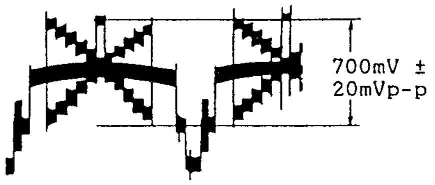


Fig. 4-6

(8) Matrix Adjustment (Figs. 4-7, 4-51)

PURPOSE		This adjustment corrects for unevenness in tint.				
TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP1201-3 ·TP1201-1 (GND)	PC PC	·RT1202 (MATRIX)	PC	Aim colour bar chart	·Oscilloscope	Blue level become 70% ± 10% of the white level.

1) Connect the oscilloscope to TP1201-3.
2) Trigger the oscilloscope internally.
3) Adjust RT1202 so that the blue level becomes 70% ± 10% of the white level.

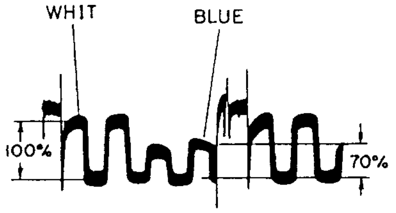


Fig. 4-7

(9) White Balance Hold Voltage Setting (Fig. 4-51)

TEST POINTS		*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP1201-5 ·TP1201-1 (GND)	PC PC			·DC Power Supply (3.3V ± 0.05V)	

1) Connect the DC power supply (3.3V ± 0.05V) to TP1201-5.
2) Momentarily connect TP1201-5 to ground (TP1201-1) to preset the white balance circuit.

Note: White balance hold voltage setting is required prior to performing R-Y/B-Y setup adjustment and white balance adjustment.

(10) R-Y/B-Y Setup Adjustment (Figs. 4-8, 4-51)

PURPOSE	This adjustment sets the proper block balance of the picture.				
TEST POINTS	*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·Video Out (AV OUT)	·RT1214 (R-Y SETUP) ·RT1215 (B-Y SETUP)	PC PC	·Cap the lens ·Apply DC 3.3V to TP1201-5.	·Oscilloscope	Minimize carrier

1) Connect the oscilloscope to video out (AV OUT).
2) Trigger the oscilloscope internally.
3) Adjust RT1214 and RT1215 for minimum carrier in the waveform.

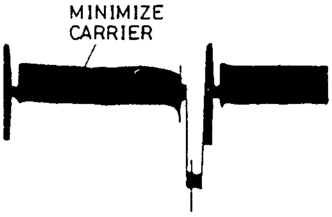


Fig. 4-8

(11) White Balance Adjustment (Figs. 4-9, 4-51)

PURPOSE	This procedure set the correct red and blue signal levels for proper white balance circuit operation.				
TEST POINTS	*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
Video Out (AV OUT)	·RT1203 (BLU GAIN) ·RT1204 (RED GAIN)	PC PC	·Attach the C14 filter ·Aim the gray scale chart. ·Apply DC 3.3V to TP1201-5.	·Oscilloscope	Minimize carrier.

1) Connect the oscilloscope to video out (AV OUT).
2) Trigger the oscilloscope internally.
3) Adjust RT1203 and RT1204 to minimize the carriers at each step of the waveform.
4) Remove the DC power supply (3.3V) from TP1201-5.

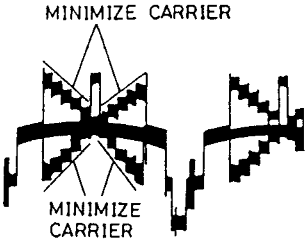


Fig. 4-9

(12) Chroma Level Adjustment (Figs. 4-10, 4-51)

PURPOSE	This adjustment sets the chroma level.				
TEST POINTS	*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
Video Out (AV OUT)	·RT1205 (CHROMA LEVEL)	PC	·Attach the C14 filter ·Aim the colour bar chart.	·Oscilloscope	Red level is 460mV ± 50mV

1) Connect the oscilloscope to video out (AV OUT).
2) Trigger the oscilloscope internally.
3) Adjust RT1205 so that the red level of the waveform is 460mV ± 50mV.
4) Check that the tint of the chart and the tint of the picture are approximately matched at this time.

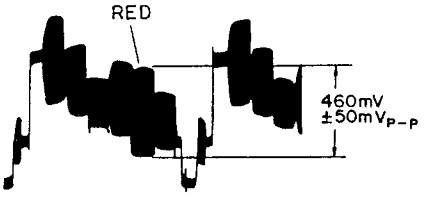


Fig. 4-10

(13) Program AE Adjustment (Fig. 4-51)

PURPOSE	This adjustment sets the shutter speed switching point.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP1201-6 PC ·TP1201-7 PC ·TP1201-1 PC (GND)	·RT1210 PC (AE ADJ 1) ·RT1211 PC (AE ADJ 2)		·DVM ·DC Power Supply (5V)	

1) Connect the DVM to TP1201-10.
2) Adjust RT1210 so the voltage at TP1201-10 is 130mV ± 10mV.
3) Connect the DVM to TP1201-7.
4) Connect the DC power supply (5V) to TP1201-6.
5) Adjust RT1211 so the voltage at TP1201-7 is 3V ± 0.03V.
6) Measure the voltage at TP1201-7 when DC 5V is applied to TP1201-6 and when it is connect the ground (TP1201-1), and adjust RT1210 so the difference is 2V ± 0.05V.
7) Apply DC 5V to TP1201-6.
8) Adjust RT1210 so the voltage at TP1201-7 is 3V ± 0.02V.
9) Remove the DC power supply from TP1201-6.

2-8. ELECTRONIC VIEWFINDER (EVF) ADJUSTMENT

(1) Deflection Yoke Position Adjustment (Fig. 4-11)

PURPOSE	This adjustment procedure eliminates picture tilt in the EVF display.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·DEFLECTION YOKE	Aim the resolution chart.	·EVF Display	

1) Loosen the deflection yoke nut.
2) Turn the deflection yoke so that the EVF picture (chart) is horizontal, matching the edges of the CRT.

Note: After adjustment is completed, tighten the deflection yoke nut.

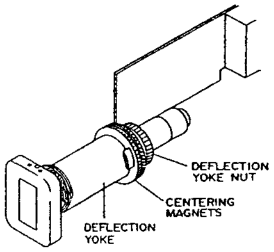


Fig. 4-11

(2) EVF Centring Adjustment (Fig. 4-11)

PURPOSE	This adjustment centres the image observed by the camera in the EVF display.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·CENTRING MAGNETS	Aim the resolution chart.	·EVF Display	

1) Remove the locking paint from the centreing magnet.
2) Adjust the centreing magnets until the centre of the picture viewed by the camera is positioned in the centre of the EVF display.

(3) EVF Vertical Size Adjustment (Fig. 4-52)

PURPOSE	This adjustment determines the vertical size of the image appearing in the EVF display			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·RT802 EVF (V. SIZE)	Aim the resolution chart.	·EVF Display	

1) Adjust RT802 so that the top and bottom edges of the chart match the top and edges of the CRT.

(4) EVF Brightness Adjustment (Fig. 4-52)

PURPOSE	This adjustment sets the brightness of the picture in the EVF display.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·RT805 EVF (BRIGHT)	Aim the resolution chart.	·EVF Display	

1) Adjust RT805 to optimize the EVF picture.

(5) EVF Focus Adjustment (Fig. 4-52)

PURPOSE	This control adjusts for optimum focus of the electronic viewfinder picture.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·RT803 (FOCUS) EVF	Aim the resolution chart.	·EVF Display	

1) Adjust RT803 so that the EVF picture is clear.

2-8. AUTOFOCUS ADJUSTMENT

(1) Autofocus Sensor Position Adjustment (Fig. 4-12)

PURPOSE	This adjustment set the autofocus sensor position adjustment.			
TEST POINTS	*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
	·SENSOR ADJUSTMENT SCREW	Aim the backfocus adjustment chart.	·Colour Video Monitor	

Note: Perform this adjustment while all case assembled.

1) Remove the gum cap of the autofocus adjustment hole.
2) Place the FOCUS switch in the "AUTO" position.
3) Position the camera section two (2) meters from the backfocus adjustment chart and illuminate the object with approximately 100 lux.
4) Set the zoom ring to the telephoto position.
5) Turn the SENSOR ADJUSTMENT SCREW so that the index on the focus ring is two (2) meters.
6) Operate the autofocus from the near end to the infinity end and check that the chart is in focus with the index at two (2) meters.
7) Attach the gum cap to the autofocus adjustment hole.

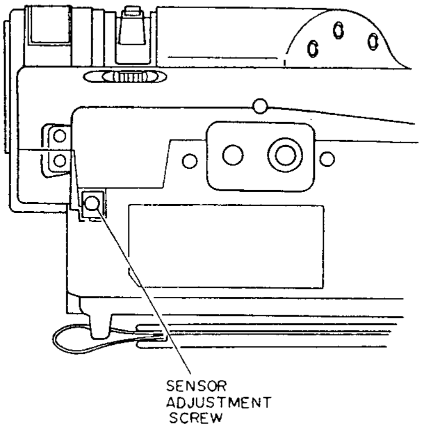


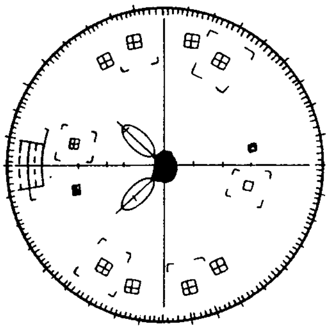
Fig. 4-12

2-10. ADJUSTMENTS WHICH CAN BE DONE USING A VECTORSCOPE

Note 1: Use the video output (AV output) as the test point for all adjustments and terminate the vectorscope with 75 ohms.

Note 2: Be sure to perform "(9) White Balance Hold Voltage Setting" before performing the adjustments in the table below.

ITEM No.	*NAME OF ADJUSTMENT*	*SUBJECT*	*ADJUSTMENT POINT*	*PROCEDURE*	*Fig. No.*
(10)	R-Y/B-Y Setup Adjustment	·Lens cap ·Apply DC 3.3V to TP1201-5.	RT1214 RT1215	1) Adjust RT1214 and RT1215 so that the bright spot is positioned at the centre.	4-13
(11)	White Balance Adjustment	·Attach the C14 filter. ·Gray scale ·Apply DC 3.3V to TP1201-5.	RT1203 RT1204	1) Adjust RT1203 and RT1204 so that the bright spot is positioned at the centre. 2) Remove the DC power supply (3.3V) from the TP1201-5.	4-13
(12)	Chroma Level Adjustment	·Attach the C14 filter. ·Colour Bar	RT1205	1) Adjust RT1205 so that the red vector is 160% ± 5% when compared to the burst level. 2) Check that the tint of the chart and the tint of the picture are approximately matched at this time.	4-14



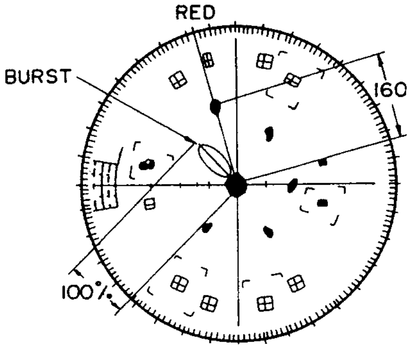

RED
BURST
160
100%

Fig. 4-14

2-11. ADJUSTMENT COMPONENTS LOCATIONS

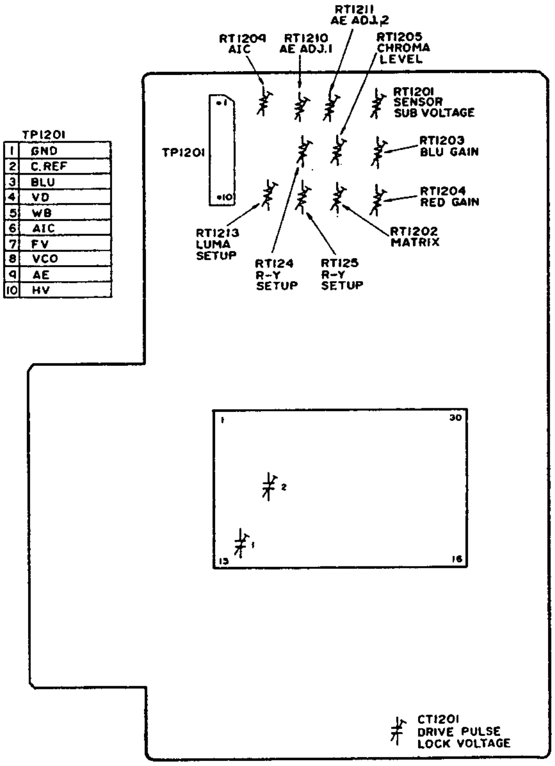

RT1211
AE ADJ.2
RT1209
AIC
RT1210
AE ADJ.1
RT1205
CHROMA
LEVEL
RT1201
SENSOR
SUB VOLTAGE
TP1201
1 GND
2 C.REF
3 BLU
4 VD
5 WB
6 AIC
7 FV
8 VCO
9 AE
10 HV
TP1201
RT1203
BLU GAIN
RT1204
RED GAIN
RT1213
LUMA
SETUP
RT124
R-Y
SETUP
RT125
R-Y
SETUP
RT1202
MATRIX
1
30
2
1
13
16
CT1201
DRIVE PULSE
LOCK VOLTAGE

Fig. 4-51 Process Circuit Board (Side-B)

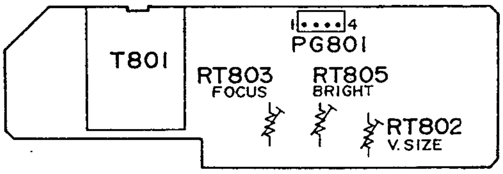

1
4
PG801
T801
RT803
FOCUS
RT805
BRIGHT
RT802
V.SIZE

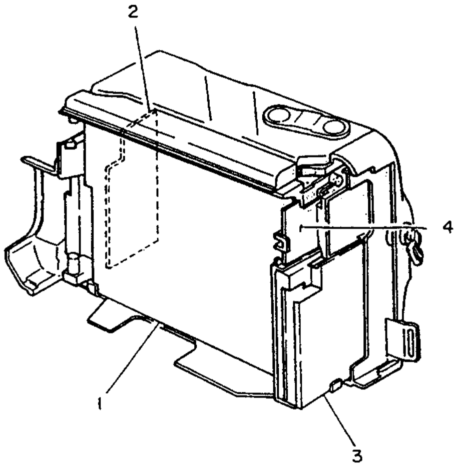
Fig. 4-52 Electronic Viewfinder (EVF)
Circuit Board

3. VCR SECTION ADJUSTMENT

3-1. CIRCUIT BOARD LOCATIONS AND SERVICING POSITION

(1) Servicing Position - 1
(Adjustment)

1. Main Circuit Board
2. Jack Circuit Board
3. DC-DC Converter
4. Fuse Circuit Board



(2) Servicing Position - 2

(When observing waveforms and voltages)

To operate the VCR section of the camera/recorder in this state, turn on the power in the following order.

1) Set the power switch to "VCR" position.
2) Connect the ATF jig to CN614 on the main circuit board.
3) Supply power while holding the F. FWD (fast forward) button on the function switch depressed.
4) Press the STOP button on the function switch.

Note: Set SW1 on the ATF jig to "OFF" position.
Do this with the ATF jig attached.

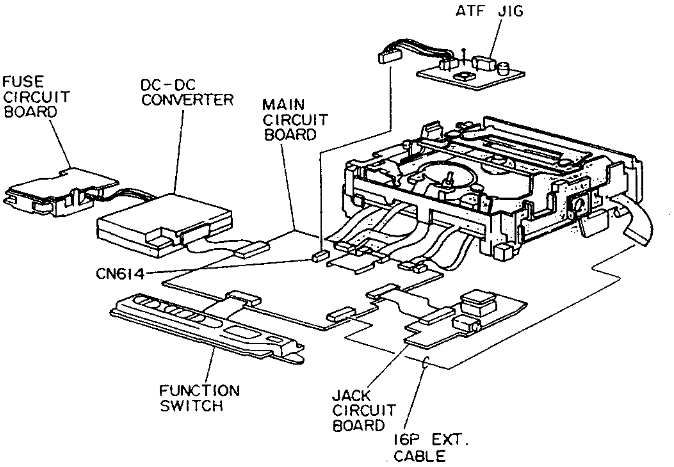


Fig. 4-102

(3) ATF JIG

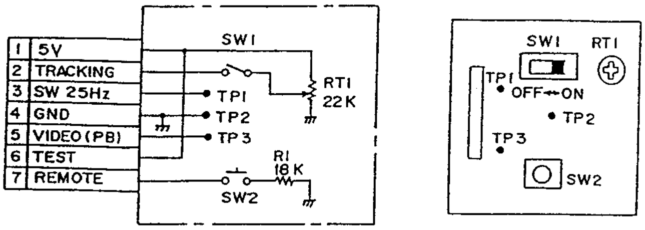


Fig. 4-103

3-2. TEST EQUIPMENT AND ALIGNMENT TAPES NECESSARY FOR ADJUSTMENT

- Test Equipment
  - Oscilloscope (dual trace)
  - Vectorscope
  - Digital Voltmeter (DVM)
  - Frequency Counter
  - Colour Video Monitor
  - Colour Bar Generator
- Charts, etc.
  - Alignment Tape (20HSC-3)
  - Blank Tape
  - ATF Jig
  - AV Input Cable
  - DC Power Supply (DC 0 ~ 7V)
  - DC Power Supply (DC 5V)
  - Resistor (1 kΩ)

3-3. ADJUSTMENT CONDITION

1) Check that the camera section has been adjusted correctly before adjusting the VCR section
2) Connect this unit, a power supply and a colour video monitor as shown in Fig. 4-1.
3) Use the 10:1 probe of the oscilloscope when other not specified.
4) When "RECORD mode" is specified, load a blank tape and set the camera/recorder to the record mode by the following procedure.

   With the camera block connected

   Set the OPERATE switch to the CAM position and press the REC START/STOP button.

   Caution: Only the signal from the camera block can be recorded in this state. To record external signals (video and audio), plug the AV input cable into the AV connector and connect TP902 on the main circuit board to ground (TP212).

   Without the camera block connected (status in Fig. 4-102)

   Connect the ATF jig, raise the power supply as described in step (2) of item 3-1, plug the AV input cable into the AV connector, connect TP902 on the main circuit board to ground (TP212) and press SW2 (REC button) on the ATF jig.
5) Electrical adjustments of the VCR block cannot be done in the state that unit is shipped from the factory. Remove the laser trimmers on the circuit board and solder the specified semi-variable resistors. (See item 3-8).
6) Remove the audio IC before adjusting the luminance/chroma circuit.

3-4. PRESET POSITION OF SWITCHES AND CONTROLS DURING ADJUSTMENT

- OPERATE switch .... "VTR" position

3-5. ADJUSTMENTS AFTER REPLACING MAJOR COMPONENTS IN THE VCR BLOCK

After replacing major components, perform adjustments, referring to the table below. The following table shows the minimum adjustments required after major components are placed. The table below may not apply when several components are replaced, depending on the symptom of the defect.

Note: After replacing the parts, check each adjustment, If you find the items necessary to be adjusted, remove the corresponding laser trimmers and replace and them with variable resistors for adjustment.

ITEM	*NAME OF ADJUSTMENT*	*NAME OF MAJOR COMPONENTS*					
		MAIN C.B.A	CYLINDER ASSEMBLY	IC901	IC201	IC202	IC203
SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT SECTION							
(1)	Setting the Head Switching Point	●	●	●			
(2)	Setting the Power Shut Off Level	●	●	●	●	●	
LUMINANCE/CHROMA CIRCUIT SECTION							
(1)	AGC Adjustment				●		
(2)	Comb Filter Adjustment				●		
(3)	IR Adjustment				●		
(4)	Emphasis Input Level Adjustment				●		
(5)	Carrier Frequency Adjustment				●		
(6)	Deviation Adjustment				●		
(7)	Playback Luminance Signal Level Adjustment				●		●
(8)	Record Luminance Signal Level Adjustment	●			●		
(9)	Record Chroma Signal Level Adjustment	●				●	
(10)	Colour Alignment Adjustment						

ITEM	*NAME OF ADJUSTMENT*	*NAME OF MAJOR COMPONENTS*					
		IC204	IC212				
SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT SECTION							
(1)	Setting the Head Switching Point						
(2)	Setting the Power Shut Off Level		●				
LUMINANCE/CHROMA CIRCUIT SECTION							
(1)	AGC Adjustment						
(2)	Comb Filter Adjustment	●					
(3)	IR Adjustment						
(4)	Emphasis Input Level Adjustment	●					
(5)	Carrier Frequency Adjustment	●					
(6)	Deviation Adjustment	●					
(7)	Playback Luminance Signal Level Adjustment						
(8)	Record Luminance Signal Level Adjustment						
(9)	Record Chroma Signal Level Adjustment		●				
(10)	Colour Alignment Adjustment		●				

3-6. SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT SECTION

(1) Setting the Head Switching Point (Figs. 4-104, 4-151)

Note: Be sure to set the head switching point after replacing the cylinder and main circuit board (system control main microprocessor and EA ROM).
The head switching point can be set automatically when the following steps performed. Although the head switching point can be set with the disassembled VCR block (in the state shown in Fig. 4-102), be sure to connect the camera block checking the head switching point.

TEST POINTS		*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP1 (SW25) ·Video out (AV OUT) ·CN614	ATF MAIN			·ATF Jig ·Alignment Tape ·Oscilloscope	7H ± 1.5H

SETTING

1) Load an alignment tape. After checking that loading is complete, disconnect the power supply.
2) Connect the ATF jig to CN614 on the main circuit board. (Set SW1 on the ATF jig to "OFF" position.)
3) Set the POWER switch to the "VCR" position.
4) Supply the power (DC 6~7V) while holding the PLAY button depressed.
5) Check that the camera/recorder enters the play mode automatically for several seconds and then the power is turned off automatically.
6) Disconnect the ATF jig from the CN614 and remove the power supply.

CONFIRMATION

Note: Be sure to connect the camera block for head switching point confirmation.

1) Set the power switch to "VCR" position.
2) Connect the ATF jig to CN614 on the main circuit board. (Set SW1 on the ATF jig to "OFF" position.)
3) Supply power while holding the F.FWD (fast forward) button on the function switch depressed.
4) Press the STOP button on the function switch.
5) Load an alignment tape and place the instrument in the PLAY mode.
6) Connect an oscilloscope terminated with 75 ohms to video out (AV OUT).
7) Trigger the oscilloscope at SW25Hz. (Use TP1 on the ATF jig.)
8) Set the oscilloscope to the (-) slope and confirm that the trailing edge of the SW25Hz signal is 7H ± 1.5H (horizontal) line before the start of channel-1 vertical sync.
9) Set the oscilloscope to the (+) slope and confirm that the leading edge of the SW25Hz signal is 7H ± 1.5H (horizontal) line before the start of channel-2 vertical sync.

Note: The waveform of channel-1 and channel-2 video signals in the diagram may be opposite depending on the alignment tape.

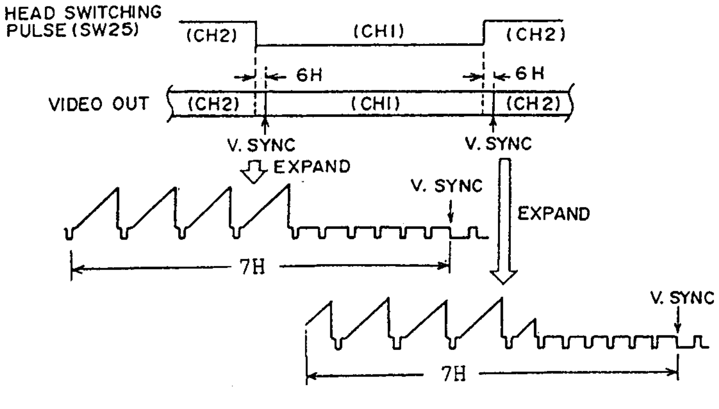


Fig. 4-104

(2) Setting the Power Shut Off Level (Figs. 4-151, 4-152)

Note: Be sure to set the power shut off level after replacing the cylinder assembly and main circuit board (system control main microprocessor and EA ROM). The power shut off level can be set automatically by performing the following steps. Be sure to connect the camera block when setting the power shut off level.

TEST POINTS		*ADJUST POINTS*	*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·CN614 ·PG051-2 ·PG051-1 (GND)	MAIN FUSE FUSE			·ATF Jig ·Blank Tape ·Colour Video Monitor ·DC Power Supply (5~7V)	

SETTING

1) Loading a blank tape and set the camera/recorder to the RECORD mode.
2) Connect the DVM to PG051-2 on the fuse circuit board. (Use PG051-1 as ground.)
3) Adjust the voltage control of DC power supply so the voltage at PG051-2 is 5.6V ± 0.03V.
4) Set the camera/recorder to the POWER SAVE mode and then disconnect the power supply.
5) Connect the ATF jig to CN614 on the main circuit board. (Set SW1 on the ATF jig to "OFF" position.)
6) Set the POWER switch to the VCR position.
7) While holding the REWIND button depressed, supply the power with the voltage (PG051-2 is 5.6V ± 0.03V) set in step 3.
8) Check that the camera/recorder enters record mode automatically for several seconds and then the power is turned off automatically.
   Check that the power voltage in the record mode is 5.6V ± 0.03V.
   If it is not 5.6V, set it to 5.6V and then perform adjustment from step 4 again.
9) Disconnect the ATF jig from CN614 and remove the power supply.

CONFIRMATION

1) Set the power switch to CAM position.
2) Load a blank tape and set the camera/recorder to the RECORD mode.
3) Connect the DVM to PG051-2 on the fuse circuit board. (Use PG051-1 as ground.)
4) Check that the unit is shut off when the power voltage (PG051-2) is set to DC 5.6V.

3-7. LUMINANCE/CHROMA CIRCUIT SECTION

(1) AGC Adjustment (Figs. 4-105, 4-151)

TEST POINTS	*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
Video Out (AV OUT)	·RT121 (AGC 2)	MAIN	·Apply a colour bar signal (1Vp-p) to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	1V ± 0.02Vp-p

1) Connect an oscilloscope terminated with 75 ohms to video out.
2) Adjust RT121 for 1V ± 0.02Vp-p.

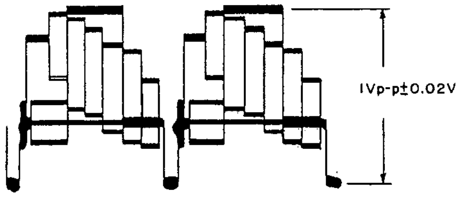


Fig. 4-105

(2) Comb Filter Adjustment (Figs. 4-106, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP207 ·TP212 (GND)	MAIN MAIN	·RT123 (COMB FILTER PHASE 2) ·RT125 (COMB FILTER GAIN 2)	MAIN MAIN	·Apply a colour bar signal (1Vp-p) to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	Minimize the residual chroma components. (30mV or less)

1) Connect the oscilloscope to TP207.
2) Adjust RT123 and RT125 to minimize the residual chroma components (30mV or less).

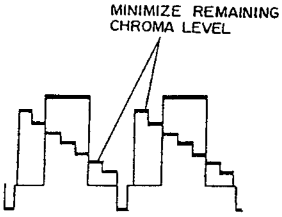


Fig. 4-106

(3) Trap Frequency Adjustment (Figs. 4-107, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP204 ·TP209 ·TP212 (GND)	MAIN MAIN MAIN	·RT127 (IR ADJ 1)	MAIN	·Apply a colour bar signal (1Vp-p) to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	Minimize the residual chroma components. (60mV or less)

1) Connect the oscilloscope to TP204.
2) Connect ground (TP212) to TP209.
3) Adjust RT127 to minimize the residual chroma components (60mV or less).
4) Remove the TP209 from the ground.

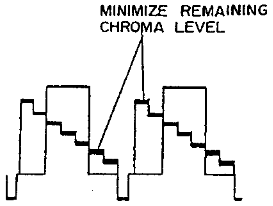


Fig. 4-107

(4) Emphasis Input Level Adjustment (Figs. 4-108, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP206 ·TP212 (GND)	MAIN MAIN	·RT128 (EMPH. INPUT LEVEL)	MAIN	·Apply a colour bar signal (1Vp-p) to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	0.45V ± 0.01Vp-p

1) Connect the oscilloscope to TP206.
2) Adjust RT128 for 0.45V ± 0.01Vp-p.

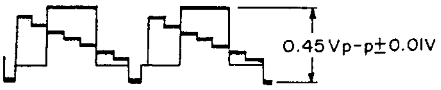


Fig. 4-108

(5) Carrier Frequency Adjustment (Figs. 4-109, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP201 ·TP212 (GND)	MAIN MAIN	·RT130 (Fo ADJ 1)	MAIN	·Apply a white (100%) signal to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	238nS ± 3nS

1) Connect the oscilloscope to TP201.
2) Adjust RT130 so the period of the widest pulse is 238nS ± 3nS.

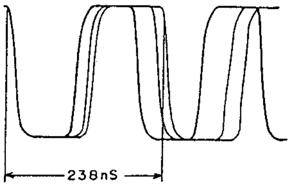


Fig. 4-109

(6) Deviation Adjustment (Figs. 4-110, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP201 ·TP212 (GND)	MAIN MAIN	·RT129 (DEV Fo ADJ)	MAIN	·Apply a white (100%) signal to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	185nS ± 2nS

1) Connect the oscilloscope to TP201.
2) Adjust RT129 so the period of the narrowest pulse is 185nS ± 2nS.

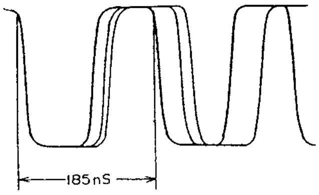


Fig. 4-110

(7) Playback Luminance Signal Level Adjustment (Figs. 4-111, 4-112, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP217 ·TP212 (GND) ·Video Out (AV OUT)	MAIN MAIN	·RT133 (PB LUMA LEVEL B) ·RT135 (PB LUMA LEVEL D)	MAIN MAIN	·Playback the alignment tape	·Oscilloscope ·Alignment Tape	·0.5V ± 0.01Vp-p ·1V ± 0.02Vp-p

1) Connect the oscilloscope to TP217.
2) Adjust RT133 so that the waveform of TP217 is 0.5V ± 0.01Vp-p. (Fig. 4-111)
3) Connect an oscilloscope terminated with 75 ohms to video out.
4) Adjust RT135 so that the waveform of video out is 1V ± 0.02Vp-p. (Fig. 4-112)

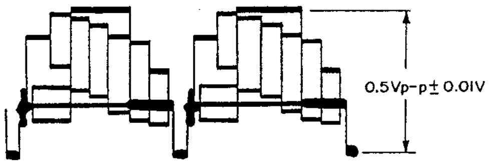


Fig. 4-111

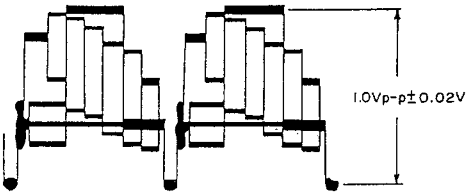


Fig. 4-112

(8) Record Luminance Signal Level Adjustment (Figs. 4-113, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP215 ·TP212 (GND)	MAIN MAIN	·RT201 (REC LUMA LEVEL)	MAIN	·Apply a colour bar signal (1Vp-p) to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	170mV ± 10mVp-p

1) Connect the oscilloscope to TP215.
2) Adjust RT201 so that the record luminance level is 170mV ± 10mVp-p.

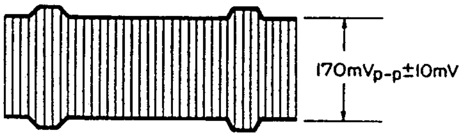


Fig. 4-113

(9) Record Chroma Signal Level Adjustment (Figs. 4-114, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP213 ·TP212 (GND)	MAIN MAIN	·RT215 (REC CHROMA LEVEL)	MAIN	·Apply a colour bar signal (1Vp-p) to the AV INPUT jack. ·RECORD mode.	·Oscilloscope ·Colour Bar Generator ·Blank Tape	85mV ± 5mVp-p

1) Connect the oscilloscope to TP213.
2) Adjust RT215 so that the burst level on the record chroma level is 85mV ± 5mVp-p.

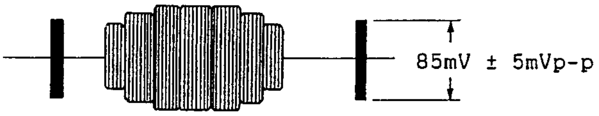


Fig. 4-114

(10) Colour Alignment Adjustment (Figs. 4-115, 4-151)

TEST POINTS		*ADJUST POINTS*		*CONDITION*	*EQUIPMENT/JIG*	*SPECIFICATION*
·TP222 ·TP223 ·TP212 (GND)	MAIN MAIN MAIN	·RT217 (fsc PHASE) ·RT218 (LOCK PHASE)	MAIN MAIN	·Playback the alignment tape.	·Vectorscope ·Alignment Tape ·DC Power Supply (DC 5V) ·Resistor (1kΩ)	

1) Connect the video out (AV OUT) to a vectorscope terminated with 75 ohms.
2) Connect the DC power supply (DC 5V) to TP222 through a resistor (1kΩ).
3) Connect the DC power supply (DC 5V) to TP223 through a resistor (1kΩ).
4) Adjust RT217 so the vector of the YL signal is in the specified YL position on the vectorscope screen (± 10 deg).
5) Remove the DC power supply from the TP222 and connect TP222 to ground (TP212) through a resistor (1kΩ).
6) Adjust RT218 so the vector of the YL signal is in the specified YL position on the vectorscope screen (± 10 deg).

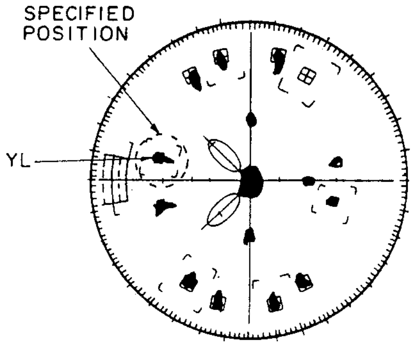


Fig. 4-115

3-8. ADJUSTMENT COMPONENTS LOCATIONS

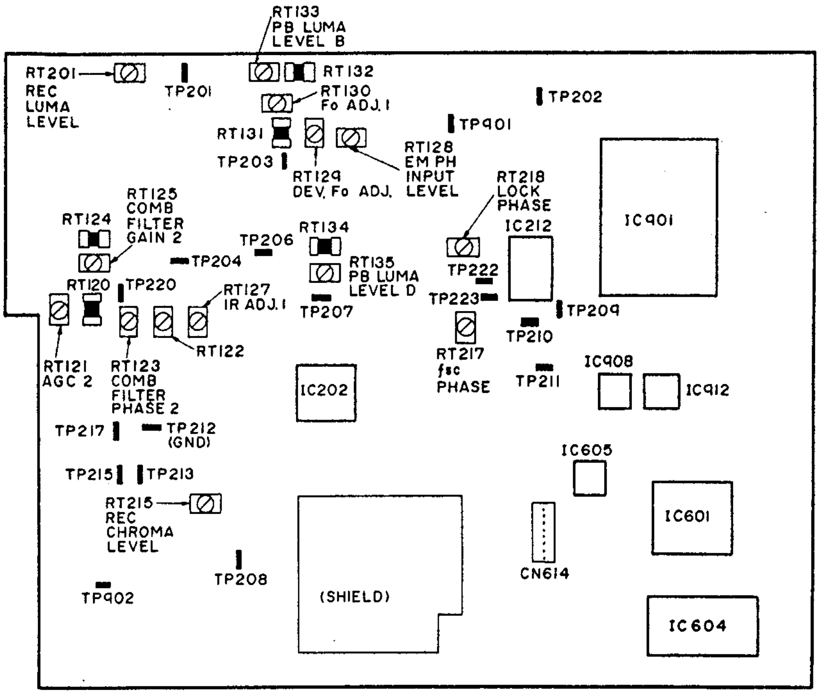

RT133
PB LUMA
LEVEL B
RT201
REC
LUMA
LEVEL
TP201
RT132
RT130
Fo ADJ. I
TP202
RT131
TP901
TP203
RT128
EM PH
INPUT
LEVEL
RT129
DEV. Fo ADJ.
RT218
LOCK
PHASE
RT125
COMB
FILTER
GAIN 2
RT124
IC212
IC901
RT134
TP206
TP204
RT135
PB LUMA
LEVEL D
TP222
RT120
TP220
RT127
IR ADJ. I
TP223
TP207
TP209
TP210
RT122
RT217
fsc
PHASE
RT121
AGC 2
RT123
COMB
FILTER
PHASE 2
IC908
IC202
TP211
IC912
TP217
TP212
(GND)
IC605
TP215
TP213
RT215
REC
CHROMA
LEVEL
IC601
TP208
CN614
TP902
(SHIELD)
IC604

Fig. 4-151 Main Circuit Board (Side - A)

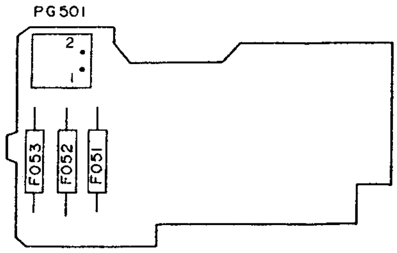

PG501
2
1
F053
F052
F051

Fig. 4-152 Fuse Circuit Board

Note: Electrical adjustments of the VCR block cannot be done in the state that the unit is shipped from the factory. Unsolder the laser trimmers on the circuit board and solder the specified semi-variable resistors. (See the table below.) Insulate the terminals shown in Fig. 4-153 when soldering.

Note: After replacing the parts, check each adjustment. If you find the items necessary to be adjusted, remove the corresponding laser trimmers and replace them with variable resistor for adjustment.

ADJUST POINT	SEMI-VARIABLE RESISTOR (Ω)	C. B. A	NAME OF ADJUSTMENT
RT121	50 k	MAIN	AGC 2
RT123	500	MAIN	COMB FILTER PHASE 2
RT125	50 k	MAIN	COMB FILTER GAIN 2
RT127	20 k	MAIN	IR ADJ 1
RT128	5 k	MAIN	EMPH. INPUT LEVEL
RT129	5 k	MAIN	DEV. Fo ADJ
RT130	10 k	MAIN	Fo ADJ. 1
RT133	2 k	MAIN	PB LUMA LEVEL B
RT135	2 k	MAIN	PB LUMA LEVEL D

Note: Insulate the terminals shown in Fig. 4-153 when soldering.
Adjust the semi-variable resistors within the range shown in Fig. 4-153.

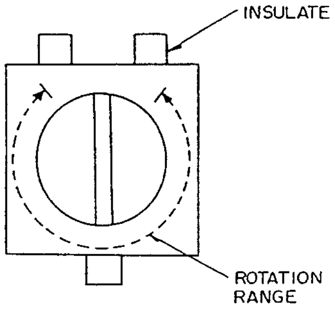

INSULATE
ROTATION
RANGE

Fig. 4-153

CHAPTER 5 SCHEMATIC DIAGRAM AND CIRCUIT BOARD DIAGRAMS

WHEN USING THIS SERVICE REFERENCE MATERIAL

1. Markings in Schematic and Circuit Board Diagrams

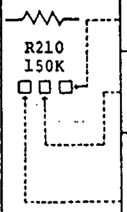
(1) Parts with marks "■" attached to circuit numbers in the schematic and circuit board diagrams are discrete components.

(2) Parts with marks Ⓩ in the circuit board diagrams are leadless jumpers.

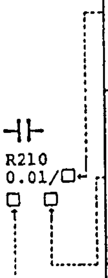
2. How to Read Abbreviations

Values, dielectric resistances (power capacitances), tolerances, grades of resistors (excluding variable resistors, etc.) and capacitors are indicated in the schematic diagrams using abbreviations. Collate these abbreviations and the following tables for reading abbreviations to replace parts correctly.

2-1. Resistors

	Value	No indication .... ohm K .... kohm
	Tolerance	No indication .... ±5% K .... ±10% M .... ±20%
	Power capacitance	No indication .... 1/8W (All capacitances other than 1/8W are indicated in schematic diagrams with W omitted)
	Type	No indication .. Carbon film fixed RC .... Carbon solid RW .... Power-type wire-wound solid RS .... Metal oxide film solid RN .... Metal film solid
Example R210 150K .... 150 kohm, carbon solid RC.1/2.K 1/2W, ±10%		

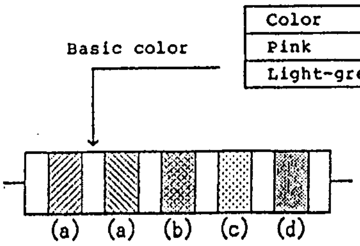
2-2. Capacitors

	Value	No indication .... μF P .... PF
	Dielectric resistance	No indication .... 50WV (All resistances other than 50WV and those of electrolytic capacitors are indicated with WV omitted.)
	Tolerances	No indication .... ±10% J .... ±5% M .... ±20% C .... ±0.25PF Z .... +80%/-20% (No indication with electrolytic capacitors (excluding tantalum and high stability electrolytic capacitors)
	Type	No indication .. Ceramic, general electrolytic (see circuit symbol to distinct from ceramic) MYL .... Mylar (Polyester film) STY .... Styrol TA .... Tantalum KU .... High stability electrolytic MP .... Metalized paper
Example C210 0.01/25 .... Mylar, 0.01μF, 25WV MYL.J ±5%		

3. How to Read Capacitance of Resistance-Type Capacitors and Coils

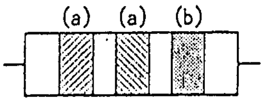
3-1 Capacitors

Color	Related voltage
Pink	25V
Light-green	50V



Color	Capacitance (a)	Multiplier (b)	Tolerance (c)	Characteristics (d)
Black	0	10^0	±20%	For temperature compensation
Brown	1	10^1		
Red	2	10^2		
Orange	3	10^3		
Yellow	4	10^4		
Green	5	10^5		
Blue	6	10^6		
Purple	7			
Gray	8		±30%	High permittivity type
White	9			For temperature compensation
Gold			±5%	
Silver			±10%	

3-2 Coils



4. Cautions on Use of MOS ICs

(1) MOS ICs are inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.

(2) High voltages may be applied during soldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.

(3) The human body and clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so workers should be grounded.

(4) Be sure to ground measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

5. Measure the voltages at each section with the negative side of power supply as a reference.

The voltages in the camera section are measured with the VTR in the record mode, and those in the VTR section are measured in the record and playback modes.

* Voltages in ( ) are in the record mode.

* One voltage value is common for recording and playback.

LEADLESS COMPONENT IDENTIFICATION

1. Leadless Transistors

The leadless transistor number is indicated by a code on its surface, using one letter, one letter and one numeral, two letters, two letters and one numeral, two numerals, two numerals and one letter, or three letters.

Letter	Transistor Number	Letter	Transistor Number
A	2SB709	H	2SA1036K
A(R)	2SB1218R(AR)	I	2SB792
A(S)	2SB766S(AS)	J	2SC2735
A(J)	2SB1000J(AJ)	K	2SA1036
B	2SC1621	K(P)	2SC2413P(KP)
B(J)	2SB1001J(BJ)	L	2SC2462
B(R)	2SC4081R(BR)	M	2SA1052
B(R)	2SC2412AR(BR)	N	2SC1653
B(S)	2SC2412KS(BS)	N(E)	2SD1306E(NE)
C	2SA1122	P	2SD814
C(L)	2SD999L(CL)	P(E)	2SA1171E(PE)
C(R)	2SB710R(CR)	Q	2SC2620
C(R)	2SC4097R(CR)	Q(O)	2SC2714O(QO)
C(R)	2SC2411R(CR)	R	2SC2618
C(Q)	2SC2411KQ(CQ)	S	2SA1121
D	2SC2463	S(Q)	2SC3082KQ(SQ)
D(L)	2SB798L(DL)	U	2SC2404
E	2SA1022	W	2SD602
F	2SC2619	Y	2SD601
F(S)	2SA1037KS(FS)	Y(R)	2SD1819R(YR)
F(R)	2SA1576R(FR)	Z	2SD874
AA(S)	2SD1757KS(AAS)	DB(R)	2SD1766R(DBR)
BC(R)	2SB1188R(BCR)	IR(D)	2SA1484D(IRD)
BF(R)	2SB1308R(BFR)		
1D(T)	2SD1328T(1DT)	1C(R)	2SB902R(1CR)
B(3)	2SC1621(3)(B3)	L(6)	MMBC1623(6)(L6)
C(7)	2SA811(7)(C7)	L(6)	2SC1623(6)(L6)
L(7)	2SC2812(7)(L7)	F(2)	2SC1009(2)(F2)
M(6)	2SA812(6)(M6)	M(6)	2SA1179(6)(M6)
N(4)	2SC1653(4)(N4)		
D(16)	2SC1622A(16)(D16)	R(25)	2SC3356(25)(R25)
R(35)	2SC3583(35)(R35)	R(45)	2SC3585(45)(R45)
Y(25)	NTM3906(25)(Y25)		
1(D)	2SC3127D(1D)		
S1	FMS1	S2	FMS2
T1	IMT1	W1	FMW1
W2	FMW2	W3	FMW3
X1	IMX1	Y1	FMY1
Y3	FMY3	Z1	IMZ1
Z2	IMZ2		
4R	XN1C301	5H	XN4501
5K	XN4401		
Digital Transistor			
04	DTC114TK	06	DTC144TK
13	DTA143EK	15	DTA124K
15(s)	DTA124EU	16	DTA144EK
16(s)	DTA144EU	23	DTC143EK
24	DTC114EK	24(s)	DTC114EU
25	DTC124K	25(s)	DTC124EU
26	DTC144K	26(s)	DTC144EU
33	DTA143XK	43	DTC143XK
52	DTA123YK	64	DTC114YK
6B	UN5112	8B	UN5212
F52	DTB123	G21	DTD113ZK
H03	DTC343TK	H27	DTC363EK
P31	FP1L2Q		
A1	FMA1	A2	FMA2
B2	IMB2	C2	FMC2
D2	IMD2	G1	FMG1
G2	FMG2	G5	FMG5
H2	IMH2		
FET			
G	2SK302	J	2SK208
K	2SK160	W	2SK322
X	2SK157	X(4)	2SK94(4)(X4)
X(17)	2SK425(17)(X17)		
Y	2SK197	Z	2SK217
XA	2SK980		
3	2SK620	3(O)	2SK621(O)(3O)
1M	2SA1052	1F	2SK321
1K	2SK316	2B	2SK374

* "(s)" in the above table shows a component with smaller size.

* Codes on the digital transistors show only the transistor numbers.

(1) Identification for two letters.
Use this code and the following chart for component identification.

Example:

Code	Number
CD	2SA1122D
LD	2SC2462D

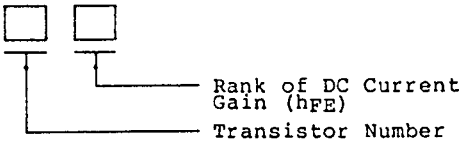


Fig.5-1 Leadless Transistor Code

(2) Identification for two types of one letter and one numeral.
Use this code and the following chart for component identification.

Letter	Transistor Number
L	2SC1623

Example:

Code	Number
L5	2SC1623(5)
L6	2SC1623(6)

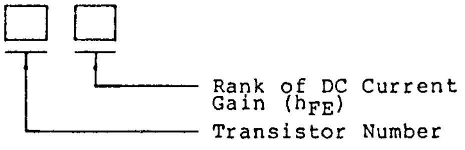
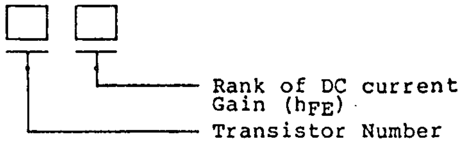


Fig.5-2 Leadless Transistor Code

Example:

Code	Number
1D	2SC3127D



Note: Codes S1, S2, T1, W1, W2, W3, X1, Y1, Y3, Z1 and Z2 show only the transistor numbers.

Fig.5-3 Leadless Transistor Code

(3) Identification for one numeral and two letters.
Use this code and the following chart for component identification.

Example:

Code	Number
1FQ	2SK321Q

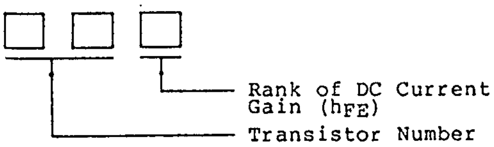


Fig.5-4 Leadless Transistor Code

(4) Identification for one letter and two numerals.
Use this coce and the following chart for component identification.

Example:

Code	Number
R25	25C3356

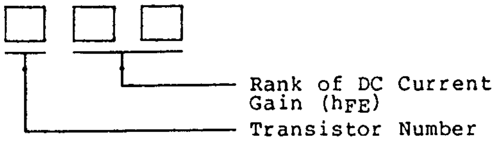


Fig. 5-5 Leadless Transistor Code

(5) Identification for two letters and one numeral.
Use this code and the following chart for component identification.

Example:

Code	Number
DV5	2SD596

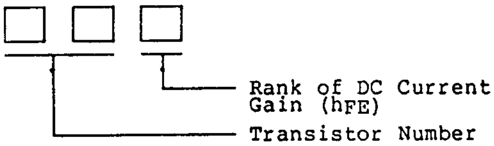


Fig. 5-6 Leadless Transistor Code

(6) Identification for three letters.
Use this code and the following chart for component identification.

Example:

Code	Number
AAS	2SD1757KS

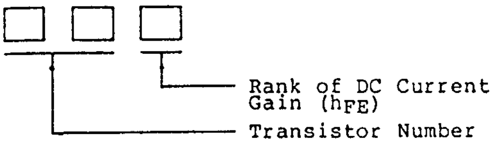


Fig. 5-7 Leadless Transistor Code

2. Leadless Diodes

Leadless diode numbers are indicated by a code on the surface, using one letter and one numeral, two letters, two letters and one numeral, two numerals, two numerals and one letter, or three numerals.
Use this code and the following chart for component identification.

Code	Diode Number	Code	Diode Number
BE	1SV172		
MC	MA153	MC(s)	MA143
MH	MA151K	MH(s)	MA141K
MN	MA151WA	MN(s)	MA141WA
MO	MA152WA		
MT	MA151WK	MT(s)	MA141WK
MU	MA152WK		
M1D	MA160	M1P	MA714
M2A	MA122	S1A	1SR143
N	DAN202K	Z	DA106K
A3	1S2835	A5	1S2837
C1	HSM88S	C2	HSM276S
1A	MA110		
3.0L	MA3030L	4.3L	MA3043L
4.7M	MA3047M	5.1M	MA3051M
5.1L	MA3051L	5.6M	MA3056M
6.2L	MA3062L	6.8M	MA3068
6.8M	MA3068M	7.5H	MA3075H
7.5L	MA3075L	8.2M	MA3082M
9.1M	MA3091	9.1M	MA3091M
10L	MA3100L	56M	MA3056M
75L	MA3075L	82M	MA3082M
91M	MA3091M		
20	HZM6-B	27	RD2.7M-B
30	RD3.0M-B	51	RD5.1M-B2
56	RD5.6M-B	91	RD9.1M-B
102	RD10M-B2	122	RD12M-B2
163	RD16M-B3	182	RD18M-B2
271	RD2.7M-B	272	RD2.7M-B2
301	RD3.0M-B	362	RD3.6M-B2
391	RD3.9M-B1	512	RD5.1M-B2
561	RD5.6M-B	621	RD6.2M-B1
681	RD6.8M-B	683	RD6.8M-B3
911	RD9.1M-B		

* "(s)" in the above table shows a component with smaller size.

3. Leadless Resistors

The resistor value is indicated on the surface of the component, using a three-digit numbers, or one letter and one numeral.

(1) Identification for three digit numbers.
Read this code following the same procedure as when reading the color code on discrete resistors.

Example:

Code	Value
330	$33 \times 10^0 = 33$ ohms
561	$56 \times 10^1 = 560$ ohms
123	$12 \times 10^3 = 12$K ohms
1R2	$1 + 0.2 = 1.2$ ohms

(R: Decimal point)

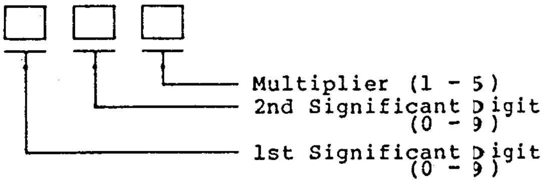


Fig. 5-8 Leadless Resistor Code

(2) Identification for one letter and one numeral.
Use this code and the following chart for component identification.

Letter	Value
A	1
C	1.2
E	1.5
G	1.8
J	2.2
L	2.7
N	3.3
Q	3.9
S	4.7
U	5.6
W	6.8
Y	8.2

Example:

Code	Value
A1	1×10^1 = 10 ohms
G2	1.8×10^2 = 180 ohms
L3	2.7×10^3 = 2700 ohms
S4	4.7×10^4 = 47K ohms
W5	6.8×10^5 = 680K ohms

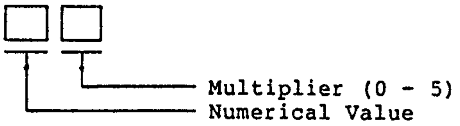
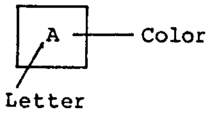


Fig. 5-9 Leadless Resistor Code

4. Leadless Capacitors

The capacitance value is indicated on the surface of the component, using body color and one letter, or one letter and one numeral.

(1) Identification for body color and one letter.

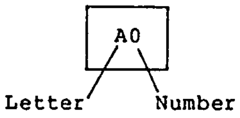


Body Color	Letter	Value
Red	A	1(PF)
	C	2
	E	3
	G	4
	J	5
	L	6
	N	7
	Q	8
	S	9
Black	A	10(PF)
	C	12
	E	15
	G	18
	J	22
	L	27
	N	33
	Q	39
	S	47
	U	56
	W	68
	Y	82
Blue	A	100(PF)
	C	120
	E	150
	G	180
	J	220
	L	270
	N	330
	Q	390
	S	470
	U	560
	W	680
	Y	820
White	A	0.001(μF)
	E	0.0015
	J	0.0022
	L	0.0027
	N	0.0033
	S	0.0047
	W	0.0068
Green	A	0.01(μF)
	E	0.015
	J	0.022
	N	0.033
	S	0.047
	U	0.056
	W	0.068
	Y	0.082
Yellow	A	0.1(μF)

Example:

Color	Code	Value
Red	A	1PF
Black	A	10PF

(2) Identification for one letter and one numeral.



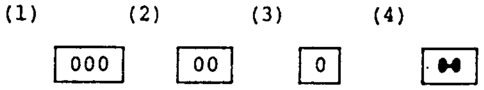
Letter /Number	Value
A0	1(PF)
H0	2
M0	3
d0	4
f0	5
m0	6
n0	7
t0	8
y0	9
A1	10(PF)
C1	12
E1	15
G1	18
J1	22
L1	27
N1	33
Q1	39
S1	47
U1	56
W1	68
Y1	82
A2	100(PF)
C2	120
E2	150
G2	180
J2	220
L2	270
N2	330
Q2	390
S2	470
U2	560
W2	680
Y2	820
A3	0.001(μF)
E3	0.0015
J3	0.0022
N3	0.0033
S3	0.0047
W3	0.0068
A4	0.01(μF)
E4	0.015
J4	0.022
N4	0.033
S4	0.047
U4	0.056
W4	0.068
A5	0.1

Example:

Letter /Number	Value
A0	1PF
A1	10PF

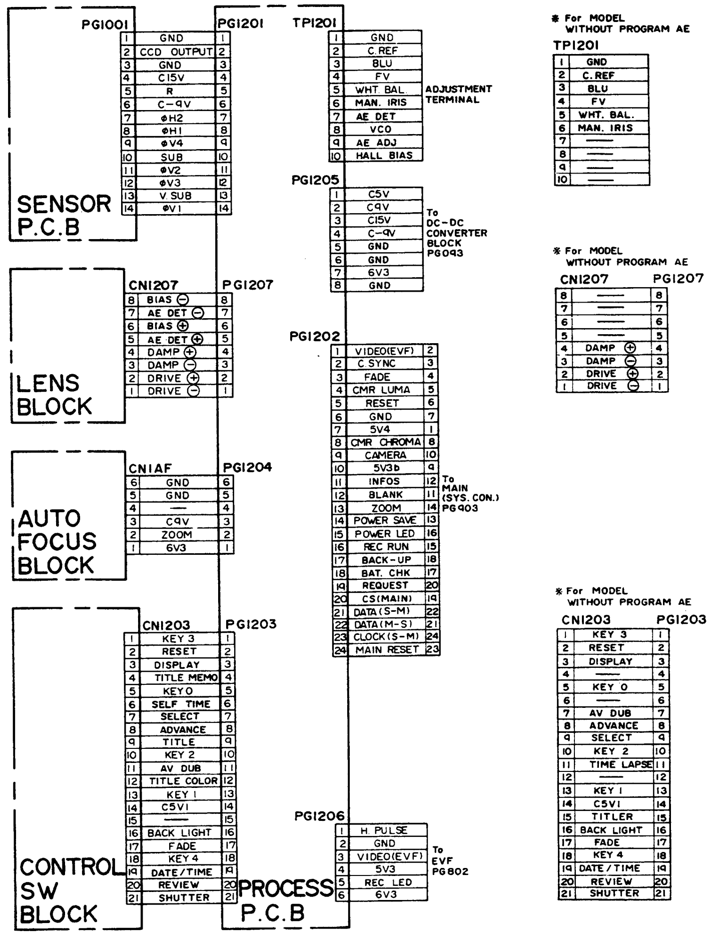
5. Leadless Jumper

The leadless jumper is indicated as shown below.



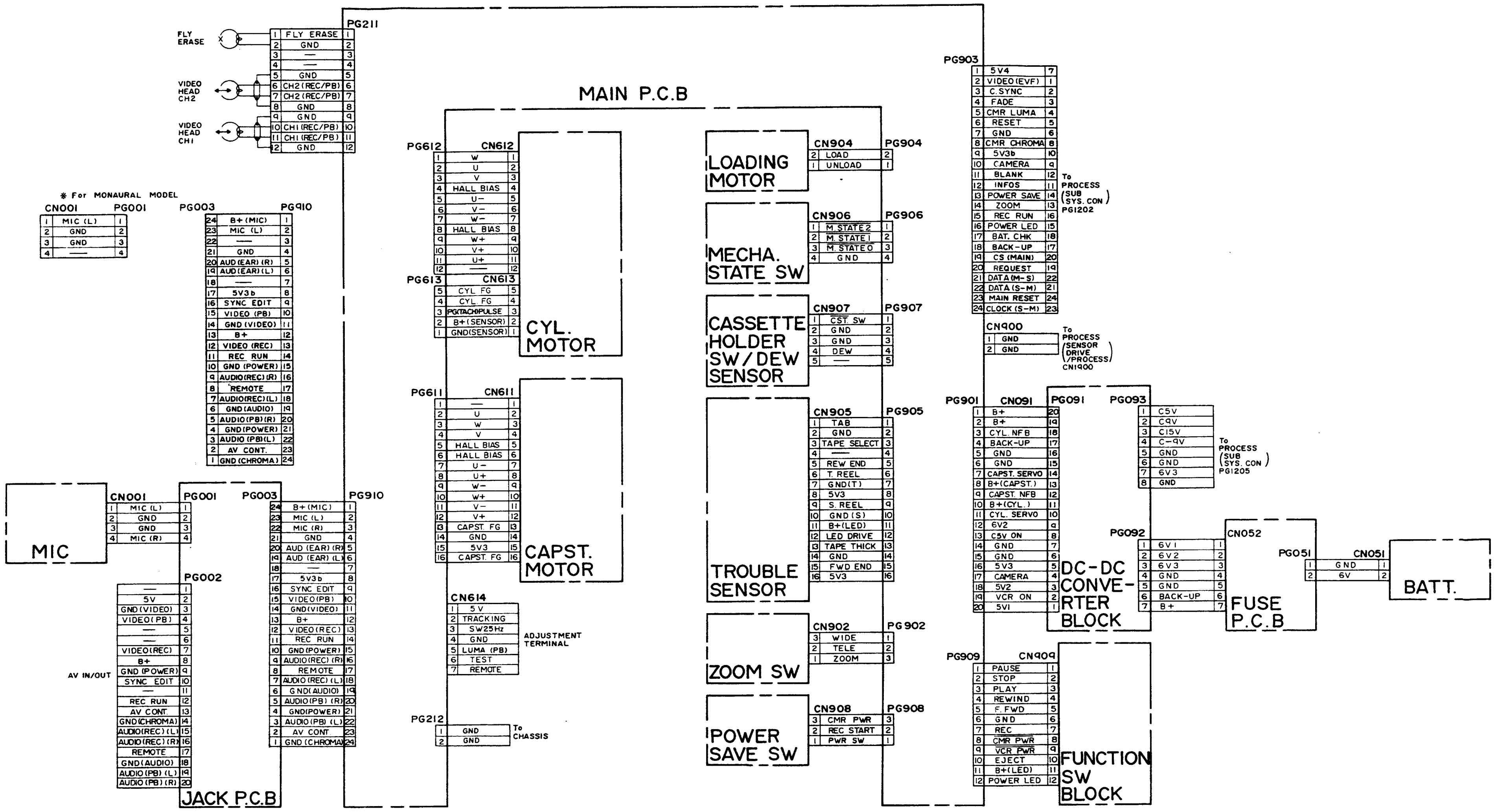
CIRCUIT BOARD CONNECTION DIAGRAM
LEITERPLATTEN-ANSCHLUSSDIAGRAMM
SCHÉMA DE CÂBLAGE DE CARTE DE CIRCUITS IMPRIMÉS

CAMERA SECTION
KAMERA-ABSCHNITT
SECTION CAMÉRA VIDÉO



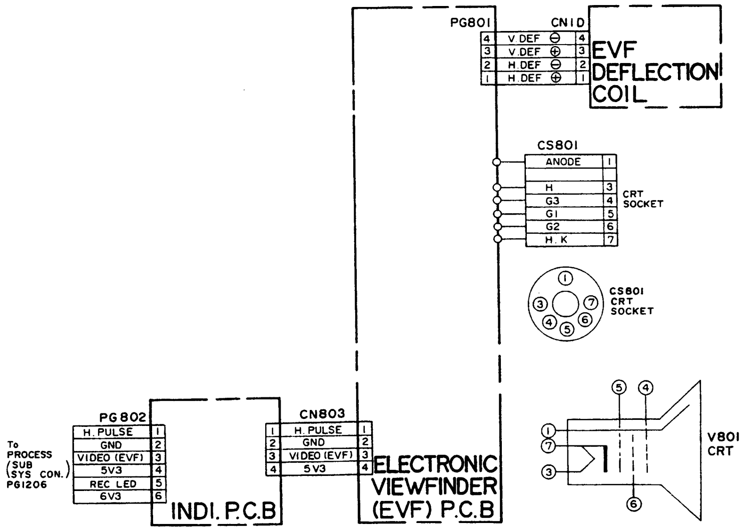
SENSOR P.C.B
PG1001
PG1201
TP1201
GND
CCD OUTPUT
C15V
R
C-9V
ADJUSTMENT TERMINAL
PG1205
To DC-DC CONVERTER BLOCK PG093
LENS BLOCK
CN1207
PG1207
PG1202
To MAIN (SYS. CON.) PG903
AUTO FOCUS BLOCK
CN1AF
PG1204
CONTROL SW BLOCK
CN1203
PG1203
PG1206
To EVF PG802
PROCESS P.C.B
* For MODEL WITHOUT PROGRAM AE

VTR SECTION
VIDEOREKORDER-ABSCHNITT
SECTION MAGNÉTOSCOPE



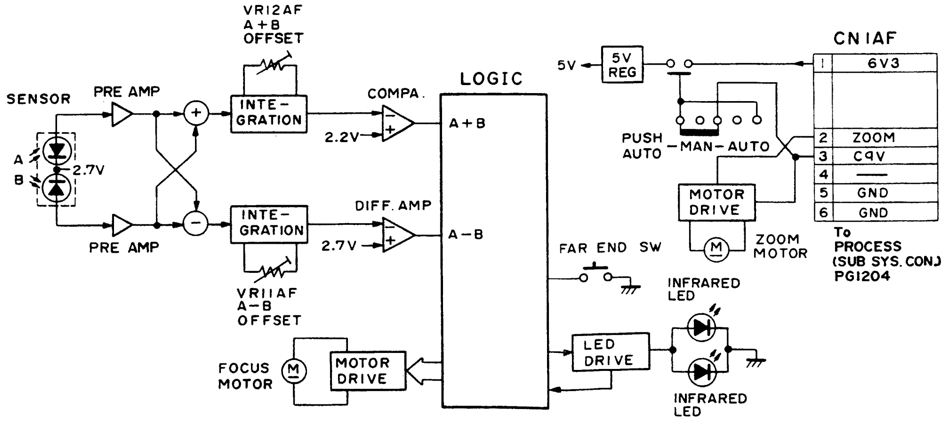
FLY ERASE
VIDEO HEAD CH2
VIDEO HEAD CH1
PG211
MAIN P.C.B
* For MONAURAL MODEL
CN001
PG001
PG003
PG910
MIC
PG002
AV IN/OUT
JACK P.C.B
PG612
CN612
PG613
CN613
CYL. MOTOR
PG611
CN611
CAPST. MOTOR
CN614
ADJUSTMENT TERMINAL
PG212
To CHASSIS
LOADING MOTOR
CN904
PG904
MECHA. STATE SW
CN906
PG906
CASSETTE HOLDER SW/DEW SENSOR
CN907
PG907
TROUBLE SENSOR
CN905
PG905
ZOOM SW
CN902
PG902
POWER SAVE SW
CN908
PG908
PG903
To PROCESS (SUB SYS. CON) PG1202
CN900
To PROCESS (SENSOR DRIVE /PROCESS) CN1900
PG901
CN091
PG091
PG093
To PROCESS (SUB SYS. CON) PG1205
PG092
DC-DC CONVERTER BLOCK
PG909
CN909
FUNCTION SW BLOCK
CN052
PG051
CN051
FUSE P.C.B
BATT.

ELECTRONIC VIEWFINDER (EVF) SECTION
ELEKTRONISCHER SUCHER- (EVF) ABSCHNITT
SECTION VISEUR ÉLECTRONIQUE (EVF)



PG801
CN1D
V DEF
H DEF
EVF DEFLECTION COIL
CS801
ANODE
H
G3
G1
G2
H K
CRT SOCKET
CS801 CRT SOCKET
V801 CRT
To PROCESS (SUB SYS. CON.) PG1206
PG802
H. PULSE
GND
VIDEO (EVF)
5V3
REC LED
6V3
INDI. P.C.B
CN803
ELECTRONIC VIEWFINDER (EVF) P.C.B

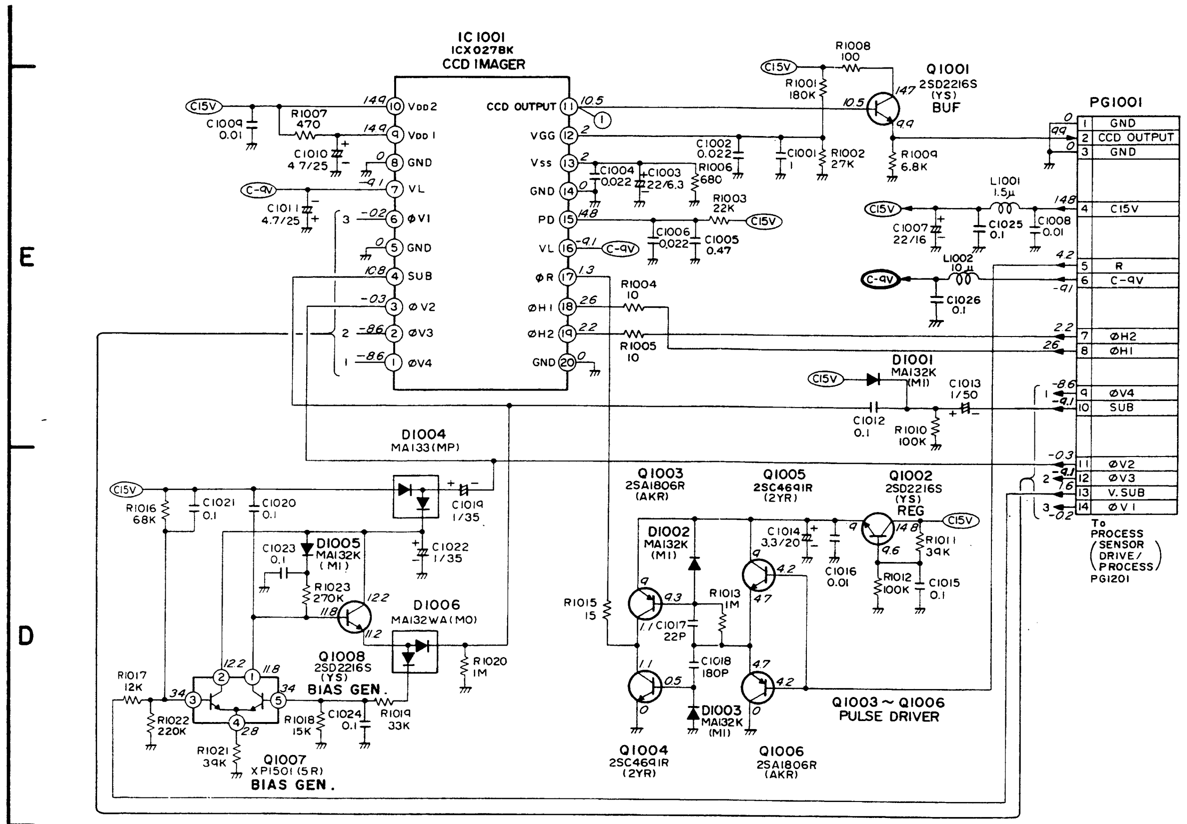
AUTO FOCUS BLOCK
AUTO-FOKUS-BLOCK
ÉTAGE DE MISE AU POINT AUTOMATIQUE



VR12AF A+B OFFSET
SENSOR
PRE AMP
A
B
2.7V
INTE-GRATION
COMPA.
2.2V
DIFF. AMP
2.7V
VR11AF A-B OFFSET
LOGIC
A+B
A-B
5V
5V REG
CN1AF
6V3
PUSH AUTO
MAN
AUTO
ZOOM
C9V
GND
MOTOR DRIVE
ZOOM MOTOR
To PROCESS (SUB SYS. CON) PG1204
FAR END SW
INFRARED LED
LED DRIVE
FOCUS MOTOR
MOTOR DRIVE

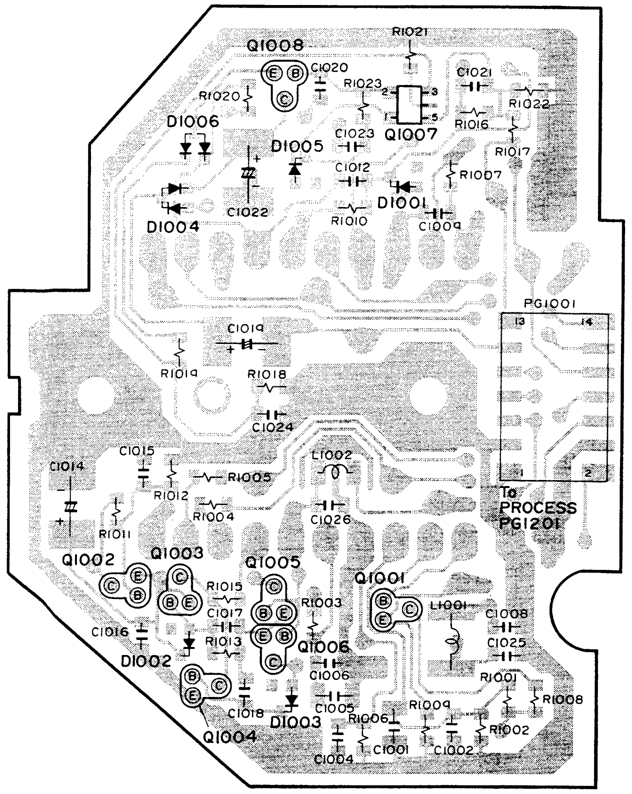
AUTO FOCUS BLOCK

SENSOR SCHEMATIC
SENSOR-SCHALTPLAN
SCHÉMA DE PRINCIPE D'ANALYSEUR D'IMAGE


IC1001
ICX027BK
CCD IMAGER
VDD2
VDD1
GND
VL
ØV1
SUB
ØV2
ØV3
ØV4
CCD OUTPUT
VGG
Vss
PD
ØR
ØH1
ØH2
Q1001
2SD2216S
(YS)
BUF
PG1001
GND
CCD OUTPUT
GND
C15V
R
C-9V
ØH2
ØH1
ØV4
SUB
ØV2
ØV3
V.SUB
ØV1
To
PROCESS
(SENSOR DRIVE/PROCESS)
PG1201
D1001
MA132K
(MI)
D1004
MA133(MP)
Q1003
2SA1806R
(AKR)
Q1005
2SC4641R
(2YR)
Q1002
2SD2216S
(YS)
REG
D1002
MA132K
(MI)
D1003
MA132K
(MI)
Q1004
2SC4641R
(2YR)
Q1006
2SA1806R
(AKR)
Q1003 ~ Q1006
PULSE DRIVER
D1005
MA132K
(MI)
D1006
MA132WA(MO)
Q1008
2SD2216S
(YS)
BIAS GEN.
Q1007
XP1501(5R)
BIAS GEN.
C15V
C-9V

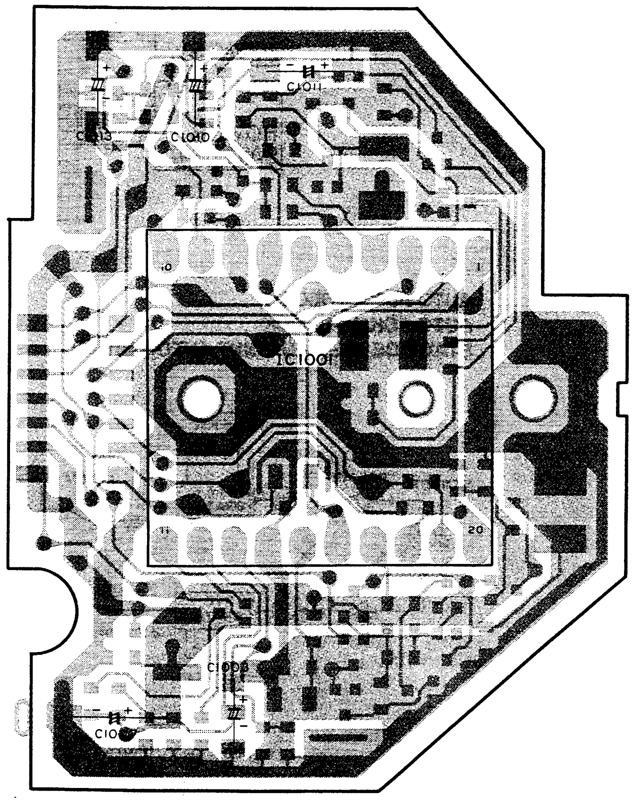
SENSOR P.C.B

SENSOR CIRCUIT BOARD
SENSOR-LEITERPLATTE
CARTE DE CIRCUITS IMPRIMÉS D'ANALYSEUR D'IMAGE


Q1008
C1020
R1021
C1021
R1020
R1023
R1022
D1006
C1023
Q1007
R1016
D1005
R1017
C1012
R1007
C1022
D1001
D1004
R1010
C1009
PG1001
C1019
R1019
R1018
C1024
C1014
C1015
R1012
R1005
L1002
R1011
R1004
C1026
To PROCESS PG1201
Q1002
Q1003
Q1005
Q1001
R1015
R1003
L1001
C1016
C1017
R1013
Q1006
C1008
C1025
D1002
C1006
R1001
C1018
D1003
R1008
Q1004
R1006
R1009
C1005
C1004
C1001
C1002
R1002

SENSOR P.C.B (SIDE A)

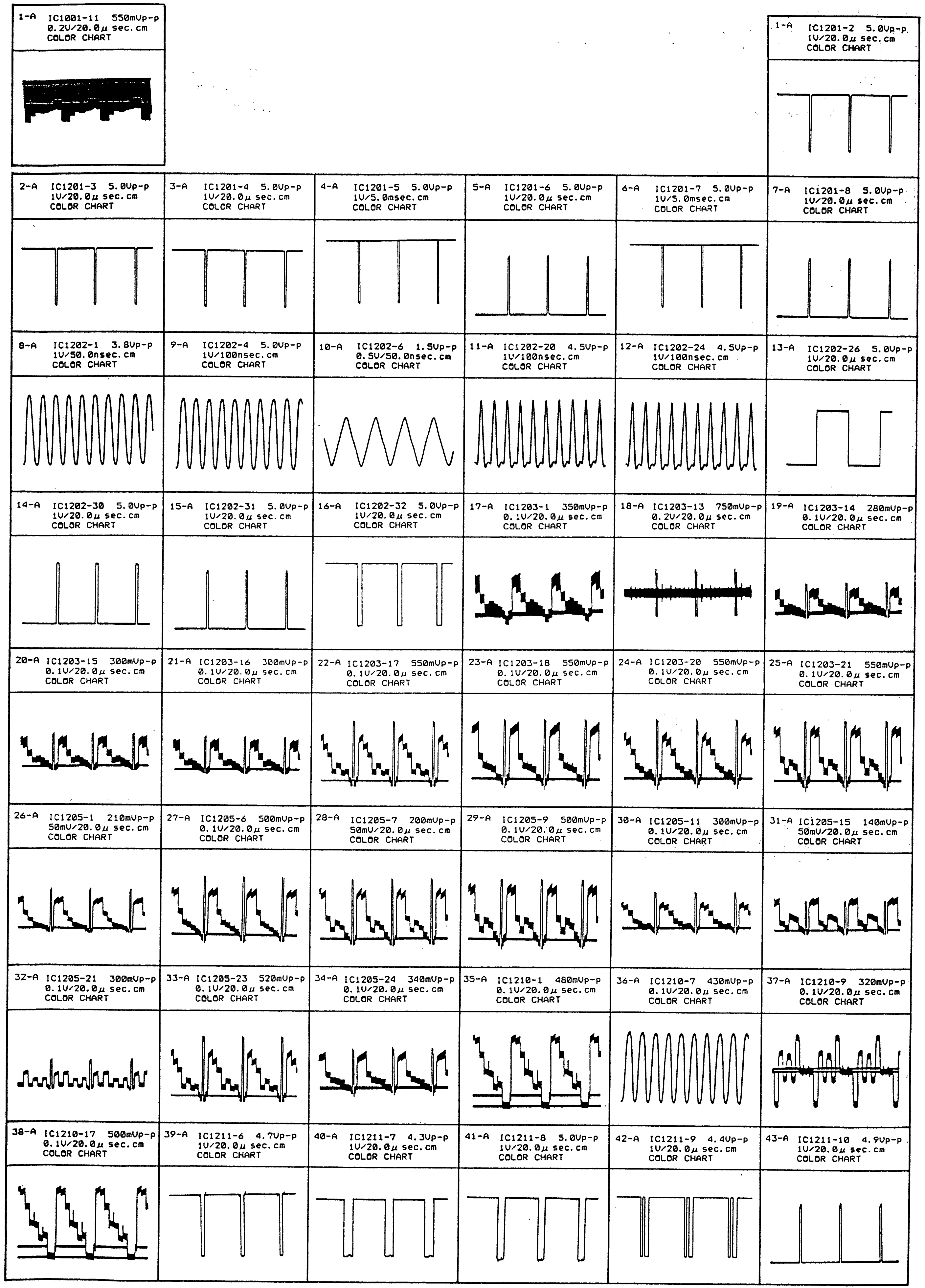
▨ : SIDE A



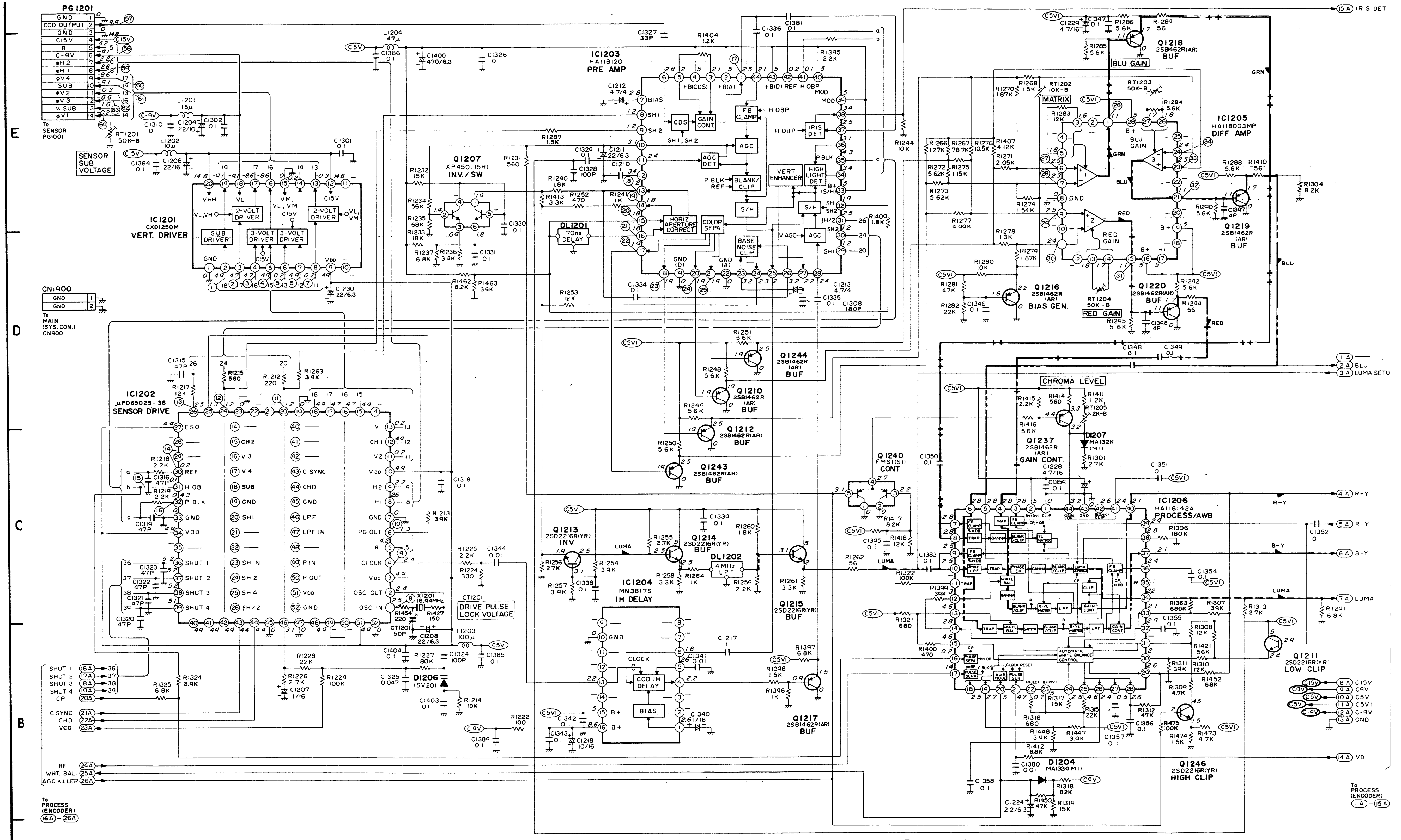
SENSOR P.C.B (SIDE B)

▨ : SIDE A

▨ : SIDE B



PROCESS (SENSOR DRIVE/PROCESS SECTION) SCHEMATIC
PROZESS- (SENSOR-ANTRIEB/PROZESS-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE DE TRAITEMENT (SECTION D'EXCITATION D'ANALYSEUR D'IMAGE/TRAITEMENT)

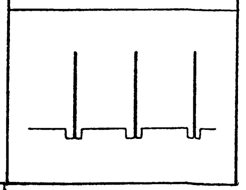

PG1201
IC1201 CXD1250M VERT DRIVER
IC1202 µPD65025-36 SENSOR DRIVE
IC1203 HA118120 PRE AMP
IC1204 MN3817S 1H DELAY
IC1205 HA118003MP DIFF AMP
IC1206 HA118142A PROCESS/AWB
Q1207 XP4501(5H) INV./SW
Q1213 2SD2216R(YR) INV.
Q1214 2SD2216R(YR) BUF
Q1215 2SD2216R(YR) BUF
Q1216 2SB1462R(AR) BIAS GEN.
Q1217 2SB1462R(AR) BUF
Q1218 2SB1462R(AR) BUF
Q1219 2SB1462R(AR) BUF
Q1220 2SB1462R(AR) BUF
Q1237 2SB1462R(AR) GAIN CONT.
Q1240 FMS1(S1) CONT.
Q1243 2SB1462R(AR) BUF
Q1244 2SB1462R(AR) BUF
Q1210 2SB1462R(AR) BUF
Q1212 2SB1462R(AR) BUF
Q1211 2SD2216R(YR) LOW CLIP
Q1246 2SD2216R(YR) HIGH CLIP
DL1201 170ns DELAY
DL1202 4MHz LPF
SENSOR SUB VOLTAGE
DRIVE PULSE LOCK VOLTAGE
CHROMA LEVEL
BLU GAIN
RED GAIN
MATRIX
CN1900
To SENSOR PG1001
To MAIN (SYS. CON.) CN900
To PROCESS (ENCODER) 16A - 26A
To PROCESS (ENCODER) 1A - 15A
15A IRIS DET
1A
2A BLU
3A LUMA SETU
4A R-Y
5A R-Y
6A B-Y
7A LUMA
8A C15V
9A C9V
10A C5V
11A C5V1
12A C-9V
13A GND
14A VD
SHUT 1 16A
SHUT 2 17A
SHUT 3 18A
SHUT 4 19A
CP 20A
C SYNC 21A
CHD 22A
VCO 23A
BF 24A
WHT. BAL. 25A
AGC KILLER 26A

PROCESS (SENSOR DRIVE/PROCESS SECTION) P.C.B

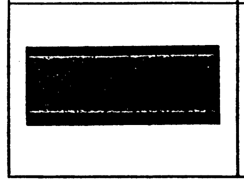
—— - ——: R-Y SIGNAL
—— -- ——: B-Y SIGNAL
— — — — —: LUMA SIGNAL
—— - - - ——: BLU SIGNAL
—— -+- ——: RED SIGNAL
—— ++ ——: GRN SIGNAL

SCHEMATIC	PAGE	SCHEMATIC	PAGE
CHROMA	5-39	PRE AMP	5-31
ENCODER (FOR PROGRAM AE MODEL)	5-11	SENSOR	5-7
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17	SENSOR DRIVE/PROCESS	5-9
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23	SERVO	5-29
FUSE	5-24	SYSTEM CONTROL (FOR STEREO MODEL)	5-25
JACK (FOR STEREO MODEL)	5-43	SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
JACK (FOR MONAURAL MODEL)	5-44	SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
LUMA	5-33	SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
MOTOR DRIVE	5-28	TROUBLE SENSOR	5-27

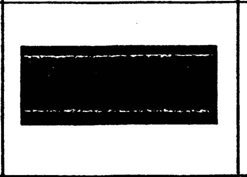
44-A IC1211-11 4.5Vp-p
1V/20.0µ sec.cm
COLOR CHART



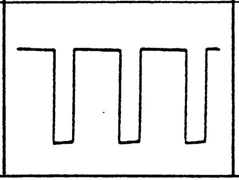
45-A IC1211-12 190mVp-p
50mV/20.0µ sec.cm
COLOR CHART



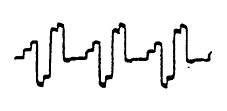
46-A IC1211-13 190mVp-p
50mV/20.0µ sec.cm
COLOR CHART



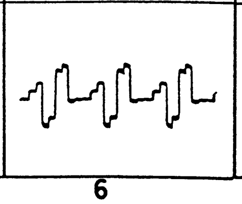
47-A IC1211-14 3.4Vp-p
1V/5.0msec.cm
COLOR CHART



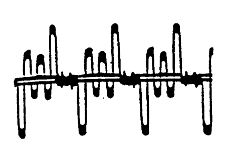
48-A IC1211-20 340mVp-p
0.1V/20.0µ sec.cm
COLOR CHART



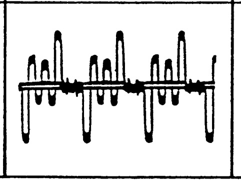
49-A IC1211-21 340mVp-p
0.1V/20.0µ sec.cm
COLOR CHART



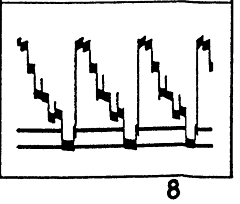
50-A IC1211-22 470mVp-p
0.1V/20.0µ sec.cm
COLOR CHART



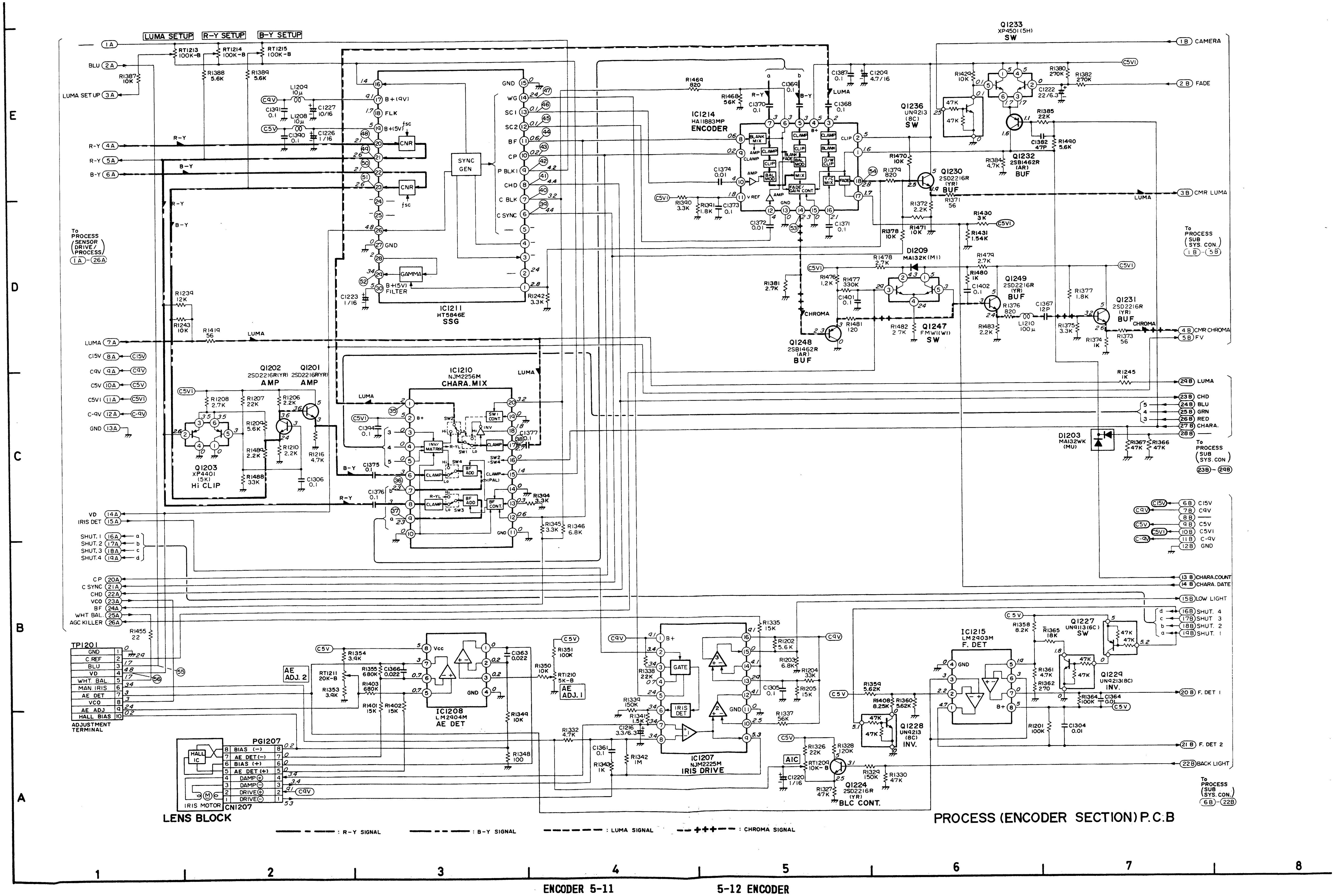
51-A IC1211-23 470mVp-p
0.1V/20.0µ sec.cm
COLOR CHART



52-A IC1211-29 500mVp-p
0.1V/20.0µ sec.cm
COLOR CHART



PROCESS (ENCODER SECTION) SCHEMATIC — FOR PROGRAM AE MODEL
PROZESS- (KODIERER-ABSCHNITT) SCHALTPLAN — FÜR PROGRAM AE MODELL
SCHÉMA DE PRINCIPE DE TRAITEMENT (SECTION CODEUR) — CAS DU MODÈLE ÉQUIPÉ DE LA FONCTION DE PROGRAMME AE

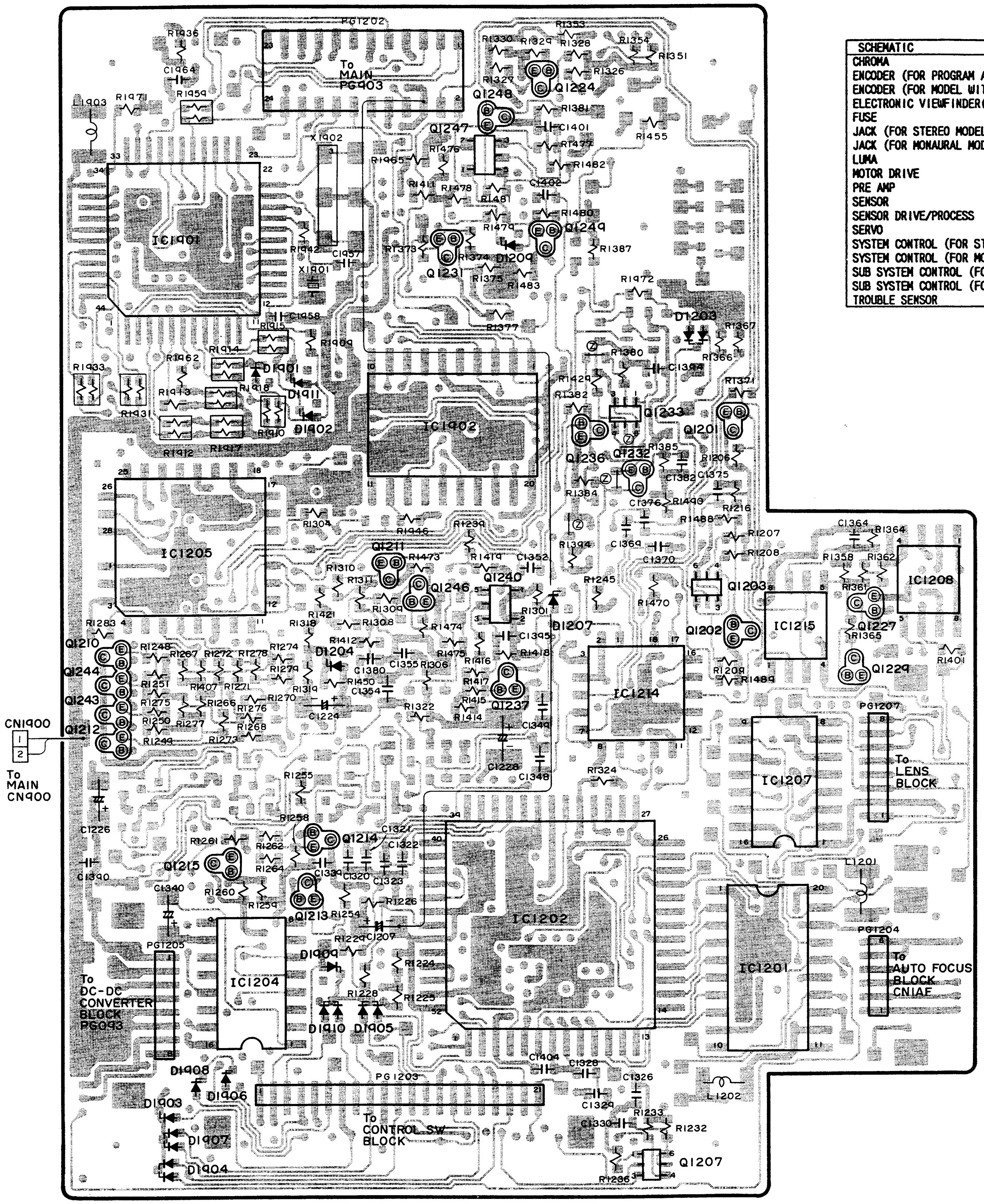

LUMA SETUP
R-Y SETUP
B-Y SETUP
RT1213 100K-B
RT1214 100K-B
RT1215 100K-B
BLU
LUMA SET UP
R-Y
B-Y
IC1211 HT5846E SSG
SYNC GEN
CNR
GAMMA
B+(9V)
FLK
B+(5V)
FILTER
GND
WG
SC1
SC2
BF
CP
P BLK1
CHD
C BLK
C SYNC
IC1214 HA11883MP ENCODER
BLANK MIX
CLAMP
CLIP
BAL MOD
MIX
FADE/GAIN CONT
Y/C MIX
D/W CLIP
FADE
V REF
Q1233 XP4501(5H) SW
Q1236 UN9213 (8C) SW
Q1232 2SB1462R (AR) BUF
Q1230 2SD2216R (YR) BUF
D1209 MA132K(M1)
Q1247 FMW1(W1) SW
Q1248 2SB1462R (AR) BUF
Q1249 2SD2216R (YR) BUF
Q1231 2SD2216R (YR) BUF
CHROMA
LUMA
To PROCESS (SENSOR DRIVE/PROCESS) 1A - 26A
To PROCESS (SUB SYS. CON.) 1B - 5B
To PROCESS (SUB SYS. CON) 23B - 29B
To PROCESS (SUB SYS. CON.) 6B - 22B
CAMERA
FADE
CMR LUMA
CMR CHROMA
FV
LUMA
CHD
BLU
GRN
RED
CHARA.
D1203 MA132WK (MU)
C15V
C9V
C5V
C5V1
C-9V
GND
CHARA.COUNT
CHARA. DATE
LOW LIGHT
SHUT. 4
SHUT. 3
SHUT. 2
SHUT. 1
F. DET 1
F. DET 2
BACK LIGHT
VD
IRIS DET
SHUT. 1
SHUT. 2
SHUT. 3
SHUT. 4
CP
C SYNC
CHD
VCO
BF
WHT BAL
AGC KILLER
IC1210 NJM2256M CHARA. MIX
INV/MATRIX
SW1 CONT
BF ADD
BF CONT
Q1202 2SD2216R(YR) AMP
Q1201 2SD2216R(YR) AMP
Q1203 XP4401 (5K) Hi CLIP
TP1201
GND
C.REF
BLU
VD
WHT BAL
MAN IRIS
AE DET
VCO
AE ADJ
HALL BIAS
ADJUSTMENT TERMINAL
PG1207
HALL IC
BIAS (-)
AE DET(-)
BIAS (+)
AE DET (+)
DAMP(+)
DAMP(-)
DRIVE(+)
DRIVE(-)
IRIS MOTOR
CN1207
LENS BLOCK
AE ADJ. 2
AE ADJ. 1
RT1211 20K-B
RT1210 5K-B
IC1208 LM2904M AE DET
IC1207 NJM2225M IRIS DRIVE
GATE
IRIS DET
AIC
RT1209 10K-B
Q1224 2SD2216R (YR) BLC CONT.
IC1215 LM2403M F. DET
Q1227 UN9113(6C) SW
Q1229 UN9213(8C) INV.
Q1228 UN9213 (8C) INV.
PROCESS (ENCODER SECTION) P.C.B
: R-Y SIGNAL
: B-Y SIGNAL
: LUMA SIGNAL
: CHROMA SIGNAL
A
B
C
D
E
1
2
3
4
5
6
7
8

ENCODER 5-11

5-12 ENCODER

PROCESS CIRCUIT BOARD — FOR PROGRAM AE MODEL
PROZESS-LEITERPLATTE — FÜR PROGRAM AE MODELL
CARTE DE CIRCUITS IMPRIMÉS DE TRAITEMENT — CAS DU MODÈLE ÉQUIPÉ DE LA FONCTION DE PROGRAMME AE

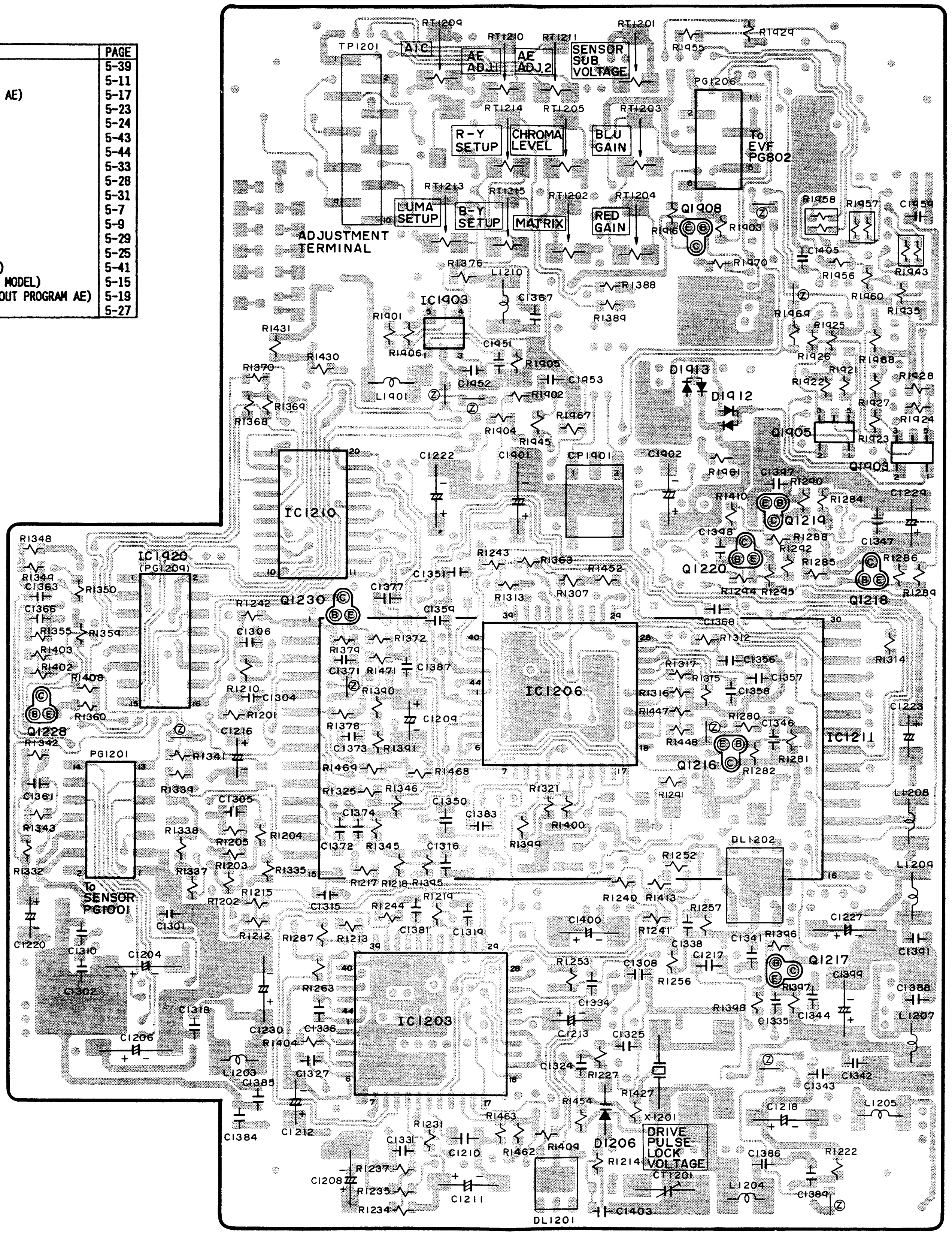
SCHEMATIC	PAGE
CHROMA	5-39
ENCODER (FOR PROGRAM AE MODEL)	5-11
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23
FUSE	5-24
JACK (FOR STEREO MODEL)	5-43
JACK (FOR MONAURAL MODEL)	5-44
LUMA	5-33
MOTOR DRIVE	5-28
PRE AMP	5-31
SENSOR	5-7
SENSOR DRIVE/PROCESS	5-9
SERVO	5-29
SYSTEM CONTROL (FOR STEREO MODEL)	5-25
SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
TROUBLE SENSOR	5-27


PG1202
To MAIN PG903
IC1901
IC1902
IC1205
IC1214
IC1215
IC1208
IC1207
IC1202
IC1201
IC1204
CN1900
To MAIN CN900
PG1207
To LENS BLOCK
PG1204
To AUTO FOCUS BLOCK CN1AF
PG1205
To DC-DC CONVERTER BLOCK PG943
PG1203
To CONTROL SW BLOCK

NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

PROCESS P.C.B
(SIDE A)

▨ : SIDE A


TP1201
ADJUSTMENT TERMINAL
AIC
AE ADJ1
AE ADJ2
SENSOR SUB VOLTAGE
R-Y SETUP
CHROMA LEVEL
BLU GAIN
LUMA SETUP
B-Y SETUP
MATRIX
RED GAIN
PG1206
To EVF PG802
IC1903
IC1210
IC1920 (PG1209)
IC1206
IC1211
PG1201
To SENSOR PG1001
IC1203
DL1202
DL1201
DRIVE PULSE LOCK VOLTAGE
CT1201

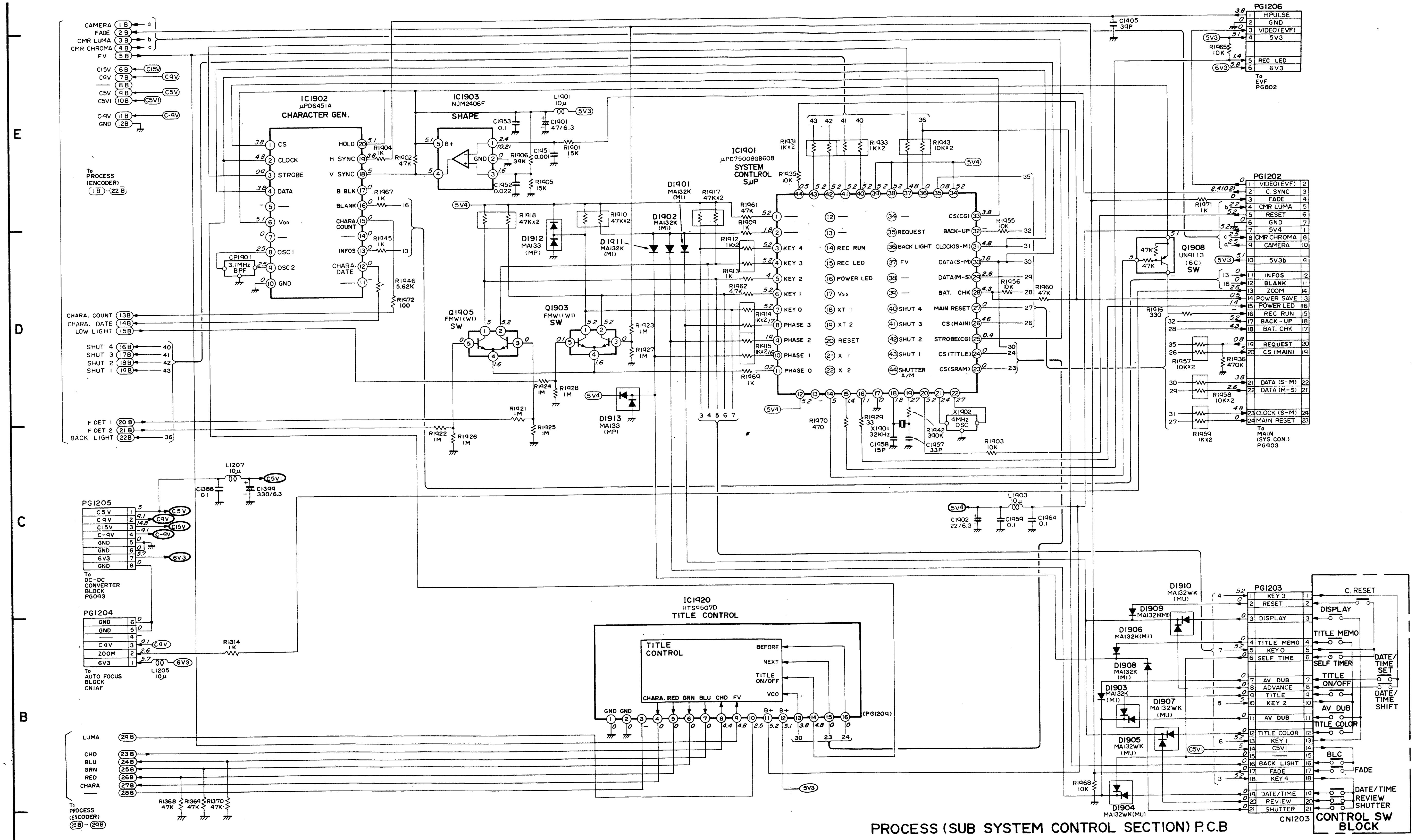
NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

PROCESS P.C.B
(SIDE B)

NOTE : SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN THE CASE IS OPENED AND SIDE B IS THE OTHER SIDE

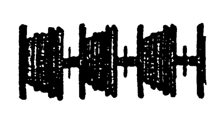
▨ : SIDE B

PROCESS (SUB SYSTEM CONTROL SECTION) SCHEMATIC — FOR PROGRAM AE MODEL
PROZESS- (SUBSYSTEM-STEUERABSCHNITT) SCHALTPLAN — FÜR PROGRAM AE MODELL
SCHÉMA DE PRINCIPE DE TRAITEMENT (SECTION DE COMMANDE DE SYSTÈME SECONDAIRE) — CAS DU MODÈLE ÉQUIPÉ DE LA FONCTION DE PROGRAMME AE

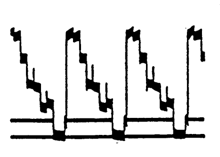

E
D
C
B
CAMERA 1B
FADE 2B
CMR LUMA 3B
CMR CHROMA 4B
FV 5B
C15V 6B
C9V 7B
8B
C5V 9B
C5V1 10B
C-9V 11B
GND 12B
To PROCESS (ENCODER) 1B - 22B
IC1902 μPD6451A CHARACTER GEN.
CS
CLOCK
STROBE
DATA
VDD
OSC1
OSC2
GND
HOLD
H SYNC
V SYNC
B BLK
BLANK
CHARA. COUNT
INFOS
CHARA. DATE
CP1901 3.1MHz BPF
IC1903 NJM2406F SHAPE
L1901 10μ
C1901 47/6.3
C1953 0.1
C1951 0.001
C1952 0.022
R1901 15K
R1902 47K
R1904 1K
R1905 15K
R1906 39K
R1967 1K
R1918 47K×2
R1910 47K×2
R1945 1K
R1946 5.62K
R1972 100
D1912 MA133 (MP)
D1901 MA132K (MI)
D1902 MA132K (MI)
D1911 MA132K (MI)
D1913 MA133 (MP)
Q1905 FMW1(W1) SW
Q1903 FMW1(W1) SW
R1923 1M
R1927 1M
R1924 1M
R1928 1M
R1921 1M
R1922 1M
R1926 1M
R1925 1M
CHARA. COUNT 13B
CHARA. DATE 14B
LOW LIGHT 15B
SHUT 4 16B
SHUT 3 17B
SHUT 2 18B
SHUT 1 19B
F DET 1 20B
F DET 2 21B
BACK LIGHT 22B
IC1901 μPD75008GB608 SYSTEM CONTROL S μP
R1931 1K×2
R1933 1K×2
R1943 10K×2
R1935 10K
R1917 47K×2
R1961 47K
R1909 1K
R1912 1K×2
R1913 1K
R1962 4.7K
R1914 1K×2
R1915 1K×2
R1969 1K
KEY 4
KEY 3
KEY 2
KEY 1
KEY 0
PHASE 3
PHASE 2
PHASE 1
PHASE 0
REC RUN
REC LED
POWER LED
VSS
XT 1
XT 2
RESET
X 1
X 2
REQUEST
BACK LIGHT
FV
SHUT 4
SHUT 3
SHUT 2
SHUT 1
SHUTTER A/M
CS(CG)
BACK-UP
CLOCK(S-M)
DATA(S-M)
DATA(M-S)
BAT. CHK
MAIN RESET
CS(MAIN)
STROBE(CG)
CS(TITLE)
CS(SRAM)
R1955 10K
R1956 10K
R1960 47K
R1970 470
R1929 33
X1901 32KHz
C1958 15P
R1942 390K
C1957 33P
X1902 4MHz OSC
R1903 10K
C1405 39P
PG1206
H PULSE
GND
VIDEO (EVF)
5V3
REC LED
6V3
R1965 10K
To EVF PG802
PG1202
VIDEO(EVF)
C. SYNC
FADE
CMR LUMA
RESET
GND
5V4
CMR CHROMA
CAMERA
5V3b
INFOS
BLANK
ZOOM
POWER SAVE
POWER LED
REC RUN
BACK-UP
BAT. CHK
REQUEST
CS (MAIN)
DATA (S-M)
DATA (M-S)
CLOCK (S-M)
MAIN RESET
R1971 1K
Q1908 UN9113 (6C) SW
R1916 330
R1957 10K×2
R1936 470K
R1958 10K×2
R1959 1K×2
To MAIN (SYS. CON.) PG903
L1207 10μ
C1388 0.1
C1399 330/6.3
PG1205
C5V
C9V
C15V
C-9V
GND
6V3
To DC-DC CONVERTER BLOCK PG043
PG1204
ZOOM
To AUTO FOCUS BLOCK CN1AF
R1314 1K
L1205 10μ
L1903 10μ
C1902 22/6.3
C1959 0.1
C1964 0.1
IC1920 HTS9507D TITLE CONTROL
TITLE CONTROL
BEFORE
NEXT
TITLE ON/OFF
VCO
CHARA.
RED
GRN
BLU
CHD
FV
(PG1209)
LUMA 29B
CHD 23B
BLU 24B
GRN 25B
RED 26B
CHARA 27B
28B
R1368 47K
R1369 47K
R1370 47K
To PROCESS (ENCODER) 23B - 29B
D1910 MA132WK (MU)
D1909 MA132KIMI
D1906 MA132K(MI)
D1908 MA132K (MI)
D1903 MA132K (MI)
D1907 MA132WK (MU)
D1905 MA132WK (MU)
D1904 MA132WK(MU)
R1968 10K
PG1203
KEY 3
RESET
DISPLAY
TITLE MEMO
KEY 0
SELF TIME
AV DUB
ADVANCE
TITLE
KEY 2
AV DUB
TITLE COLOR
KEY 1
C5V1
BACK LIGHT
FADE
KEY 4
DATE/TIME
REVIEW
SHUTTER
CN1203
C. RESET
DISPLAY
TITLE MEMO
SELF TIMER
DATE/TIME SET
TITLE ON/OFF
DATE/TIME SHIFT
AV DUB
TITLE COLOR
BLC
FADE
DATE/TIME
REVIEW
SHUTTER
CONTROL SW BLOCK
PROCESS (SUB SYSTEM CONTROL SECTION) P.C.B

A

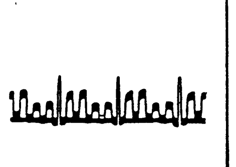
53-A IC1214-14 1.1Vp-p
0.2V/20.0μ sec.cm
COLOR CHART



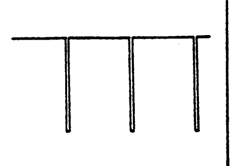
54-A IC1214-18 700mVp-p
0.2V/20.0μ sec.cm
COLOR CHART



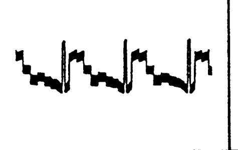
55-A TP1201-3 160mVp-p
0.1V/20.0μ sec.cm
COLOR CHART



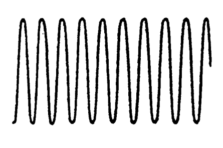
56-A TP1201-4 5.0Vp-p
1V/5.0msec.cm
COLOR CHART



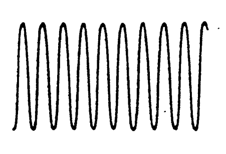
57-A PG1201-2 200mVp-p
0.1V/20.0μ sec.cm
COLOR CHART



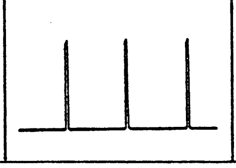
58-A PG1201-7 5.0Vp-p
1V/100nsec.cm
COLOR CHART



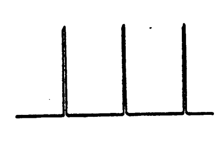
59-A PG1201-8 5.0Vp-p
1V/100nsec.cm
COLOR CHART



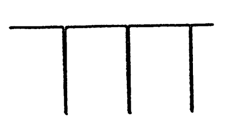
60-A PG1201-9 9.2Vp-p
2V/20.0μ sec.cm
COLOR CHART



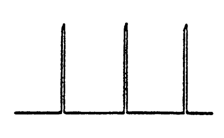
61-A PG1201-10 25Vp-p
5V/20.0μ sec.cm
COLOR CHART



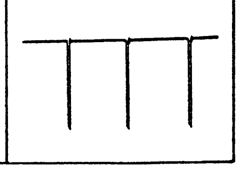
62-A PG1201-11 9.0Vp-p
2V/20.0μ sec.cm
COLOR CHART



63-A PG1201-12 9.0Vp-p
2V/20.0μ sec.cm
COLOR CHART

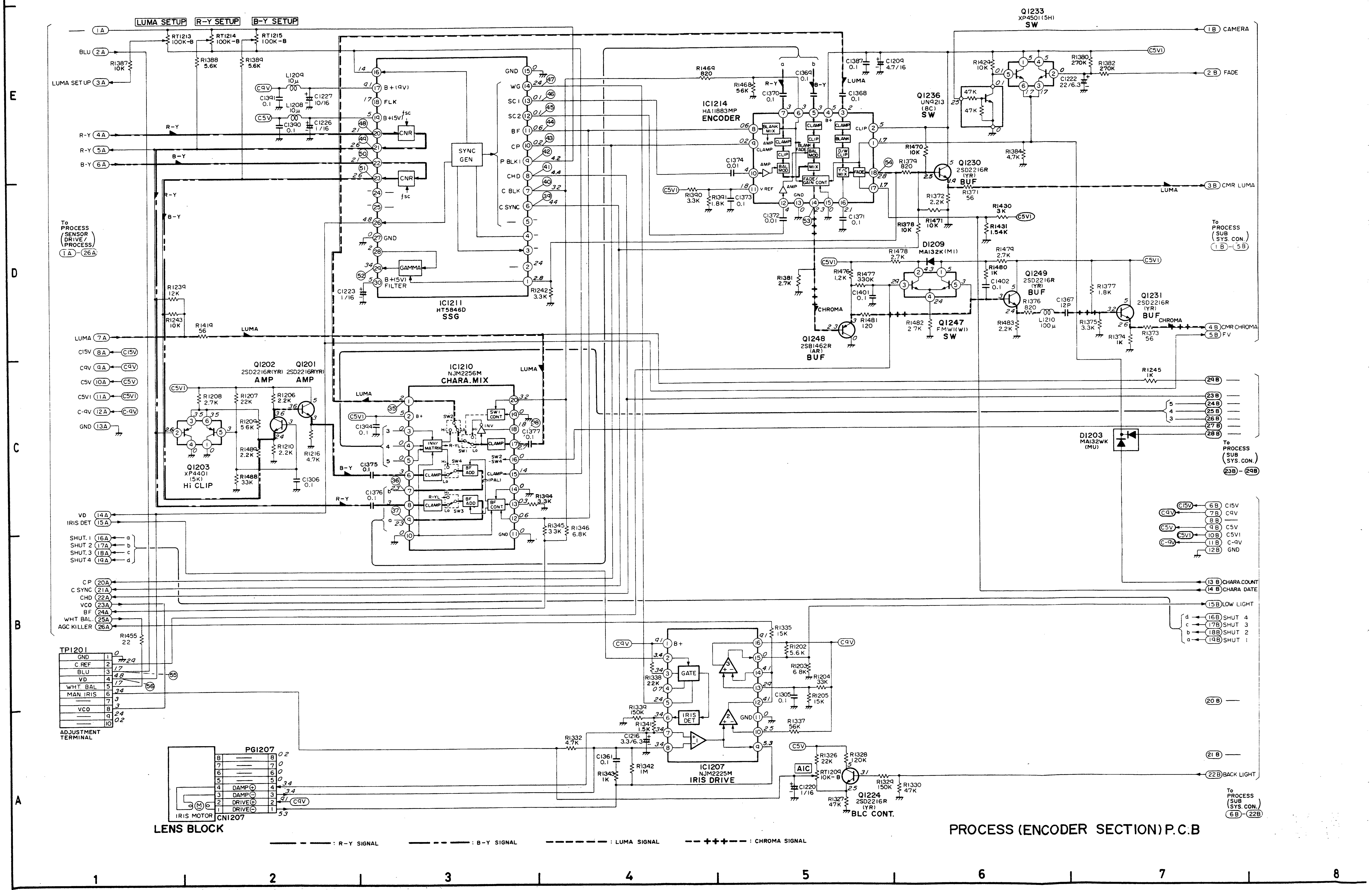


64-A PG1201-14 9.0Vp-p
2V/20.0μ sec.cm
COLOR CHART



1 2 3 4 5 6 7 8

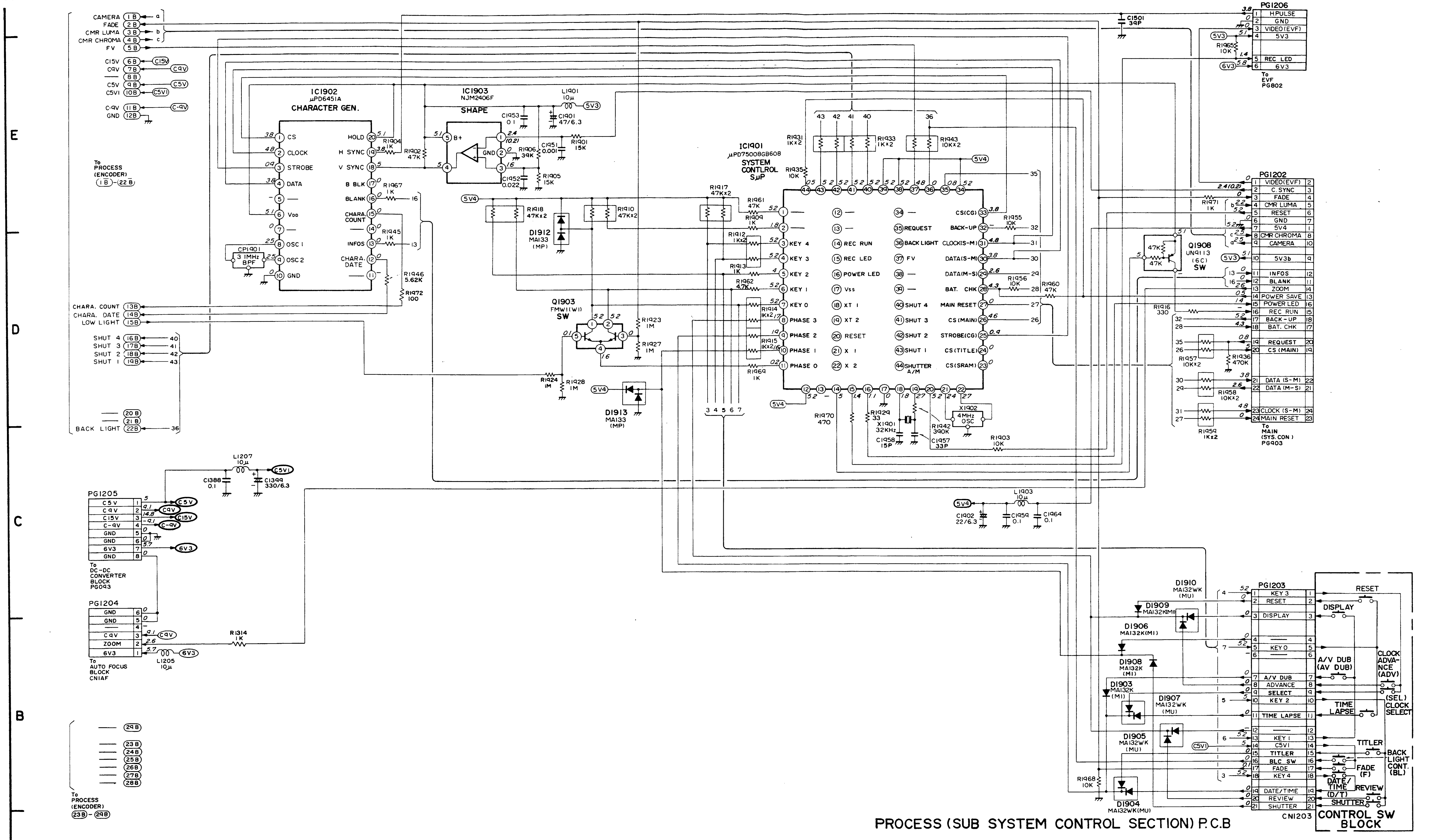
PROCESS (ENCODER SECTION) SCHEMATIC — FOR MODEL WITHOUT PROGRAM AE
PROZESS- (KODIERER-ABSCHNITT) SCHALTPLAN — FÜR MODELL OHNE PROGRAM AE
SCHÉMA DE PRINCIPE DE TRAITEMENT (SECTION CODEUR) — CAS DU MODÉLE NON ÉQUIPÉ DE LA FONCTION DE PROGRAMME AE


LUMA SETUP
R-Y SETUP
B-Y SETUP
RT1213 100K-B
RT1214 100K-B
RT1215 100K-B
BLU
LUMA SETUP
R-Y
B-Y
IC1211 HT5846D SSG
SYNC GEN
CNR
GAMMA
B+(9V)
FLK
B+(5V)
B+(5V) FILTER
GND
WG
SC1
SC2
BF
CP
P BLK1
CHD
C BLK
C SYNC
IC1214 HA11883MP ENCODER
BLANK MIX
CLAMP
CLIP
BAL MOD
MIX
FADE/GAIN CONT
Y/C MIX
FADE
D/W CLIP
V REF
Q1233 XP4501(5H) SW
Q1236 UN4213 (8C) SW
Q1230 2SD2216R (YR) BUF
Q1249 2SD2216R (YR) BUF
Q1231 2SD2216R (YR) BUF
Q1247 FMW1(W1) SW
Q1248 2SB1462R (AR) BUF
D1209 MA132K(M1)
D1203 MA132WK (MU)
CAMERA
FADE
CMR LUMA
CMR CHROMA
FV
CHROMA
LUMA
To PROCESS SENSOR DRIVE/PROCESS 1A-26A
To PROCESS (SUB SYS. CON.) 1B-5B
To PROCESS (SUB SYS. CON.) 23B-29B
To PROCESS (SUB SYS. CON.) 6B-22B
IC1210 NJM2256M CHARA. MIX
INV/MATRIX
SW1 CONT
INV
BF ADD
BF CONT
Q1202 2SD2216R(YR) AMP
Q1201 2SD2216R(YR) AMP
Q1203 XP4401 (5K) Hi CLIP
C15V
C9V
C5V
C5V1
C-9V
GND
VD
IRIS DET
SHUT. 1
SHUT. 2
SHUT. 3
SHUT. 4
CP
C SYNC
CHD
VCO
BF
WHT BAL.
AGC KILLER
CHARA. COUNT
CHARA DATE
LOW LIGHT
SHUT 4
SHUT 3
SHUT 2
SHUT 1
BACK LIGHT
TP1201
C REF
VD
WHT BAL
MAN IRIS
ADJUSTMENT TERMINAL
PG1207
CN1207
DAMP(+)
DAMP(−)
DRIVE(+)
DRIVE(−)
IRIS MOTOR
LENS BLOCK
IC1207 NJM2225M IRIS DRIVE
GATE
IRIS DET
AIC
RT1209 10K-B
Q1224 2SD2216R (YR) BLC CONT.
PROCESS (ENCODER SECTION) P.C.B
: R-Y SIGNAL
: B-Y SIGNAL
: LUMA SIGNAL
: CHROMA SIGNAL
E
D
C
B
A
1
2
3
4
5
6
7
8

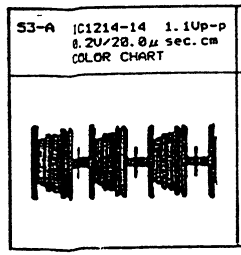
ENCODER 5-17   5-18 ENCODER

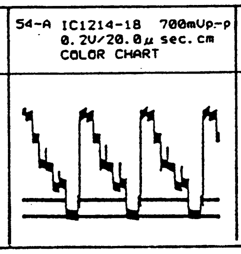
VIDE-V00643 / Druck 7

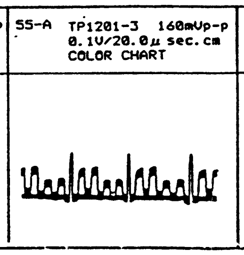
PROCESS (SUB SYSTEM CONTROL SECTION) SCHEMATIC — FOR MODEL WITHOUT PROGRAM AE
PROZESS- (SUBSYSTEM-STEUERABSCHNITT) SCHALTPLAN — FÜR MODELL OHNE PROGRAM AE
SCHÉMA DE PRINCIPE DE TRAITEMENT (SECTION DE COMMANDE DE SYSTÈME SECONDAIRE) — CAS DU MODÈLE NON ÉQUIPÉ DE LA FONCTION DE PROGRAMME AE

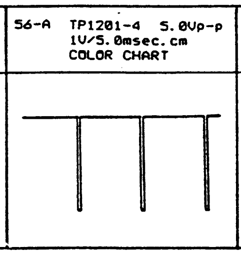

E
D
C
B
CAMERA (1B)
FADE (2B)
CMR LUMA (3B)
CMR CHROMA (4B)
FV (5B)
C15V (6B)
C9V (7B)
C5V (9B)
C5V1 (10B)
C-9V (11B)
GND (12B)
To PROCESS (ENCODER) (1B)-(22B)
IC1902 μPD6451A CHARACTER GEN.
CS
CLOCK
STROBE
DATA
VDD
OSC 1
OSC 2
GND
HOLD
H SYNC
V SYNC
8 BLK
BLANK
CHARA. COUNT
INFOS
CHARA. DATE
CP1901 3.1MHz BPF
IC1903 NJM2406F SHAPE
L1901 10μ
C1901 47/6.3
C1953 0.1
C1951 0.001
C1952 0.022
R1902 47K
R1904 1K
R1905 15K
R1906 39K
R1901 15K
R1967 1K
R1945 1K
R1946 5.62K
R1972 100
R1918 47Kx2
R1910 47Kx2
D1912 MA133 (MP)
Q1903 FMW1(W1) SW
R1923 1M
R1927 1M
R1924 1M
R1928 1M
D1913 MA133 (MP)
CHARA. COUNT (13B)
CHARA. DATE (14B)
LOW LIGHT (15B)
SHUT 4 (16B)
SHUT 3 (17B)
SHUT 2 (18B)
SHUT 1 (19B)
(20B)
(21B)
BACK LIGHT (22B)
IC1901 μPD75008GB608 SYSTEM CONTLROL SμP
R1931 1Kx2
R1933 1Kx2
R1943 10Kx2
R1935 10K
R1917 47Kx2
R1961 47K
R1909 1K
R1912 1Kx2
R1913 1K
R1962 4.7K
R1914 1Kx2
R1915 1Kx2
R1969 1K
KEY 4
KEY 3
KEY 2
KEY 1
KEY 0
PHASE 3
PHASE 2
PHASE 1
PHASE 0
REC RUN
REC LED
POWER LED
VSS
XT 1
XT 2
RESET
X 1
X 2
REQUEST
BACK LIGHT
FV
SHUT 4
SHUT 3
SHUT 2
SHUT 1
SHUTTER A/M
CS(CG)
BACK-UP
CLOCK(S-M)
DATA(S-M)
DATA(M-S)
BAT. CHK
MAIN RESET
CS(MAIN)
STROBE(CG)
CS(TITLE)
CS(SRAM)
R1955 10K
R1956 10K
R1960 47K
R1970 470
R1929 33
X1901 32KHz
C1958 15P
R1942 390K
C1957 33P
X1902 4MHz OSC
R1903 10K
C1501 39P
PG1206
H.PULSE
GND
VIDEO(EVF)
5V3
REC LED
6V3
R1965 10K
To EVF PG802
PG1202
VIDEO(EVF)
C.SYNC
FADE
CMR LUMA
RESET
GND
5V4
CMR CHROMA
CAMERA
5V3b
INFOS
BLANK
ZOOM
POWER SAVE
POWER LED
REC RUN
BACK-UP
BAT. CHK
REQUEST
CS (MAIN)
DATA (S-M)
DATA (M-S)
CLOCK (S-M)
MAIN RESET
To MAIN (SYS.CON) PG903
R1971 1K
Q1908 UN9113 (6C) SW
R1916 330
R1957 10Kx2
R1936 470K
R1958 10Kx2
R1959 1Kx2
L1207 10μ
C1388 0.1
C1399 330/6.3
PG1205
C5V
C9V
C15V
C-9V
GND
6V3
To DC-DC CONVERTER BLOCK PG093
PG1204
ZOOM
R1314 1K
L1205 10μ
To AUTO FOCUS BLOCK CN1AF
L1903 10μ
C1902 22/6.3
C1959 0.1
C1964 0.1
(29B)
(23B)
(24B)
(25B)
(26B)
(27B)
(28B)
To PROCESS (ENCODER) (23B)-(29B)
D1910 MA132WK (MU)
D1909 MA132K(MI)
D1906 MA132K(MI)
D1908 MA132K (MI)
D1903 MA132K (MI)
D1907 MA132WK (MU)
D1905 MA132WK (MU)
D1904 MA132WK(MU)
R1968 10K
PG1203
KEY 3
RESET
DISPLAY
KEY 0
A/V DUB
ADVANCE
SELECT
KEY 2
TIME LAPSE
KEY 1
C5V1
TITLER
BLC SW
FADE
KEY 4
DATE/TIME
REVIEW
SHUTTER
CN1203
A/V DUB (AV DUB)
CLOCK ADVANCE (ADV)
(SEL) CLOCK SELECT
TIME LAPSE
TITLER
BACK LIGHT CONT. (BL)
FADE (F)
DATE/TIME (D/T)
REVIEW
SHUTTER
CONTROL SW BLOCK

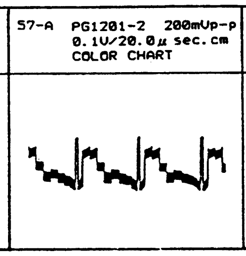
PROCESS (SUB SYSTEM CONTROL SECTION) P.C.B

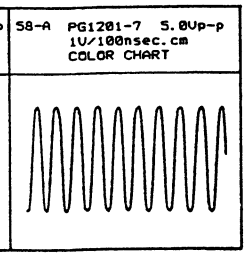

53-A IC1214-14 1.1Vp-p 0.2V/20.0μ sec.cm COLOR CHART

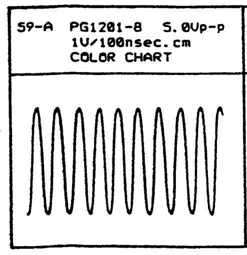

54-A IC1214-18 700mVp-p 0.2V/20.0μ sec.cm COLOR CHART

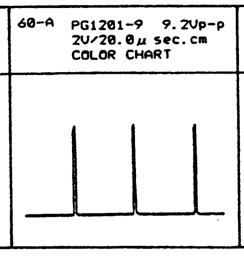

55-A TP1201-3 160mVp-p 0.1V/20.0μ sec.cm COLOR CHART

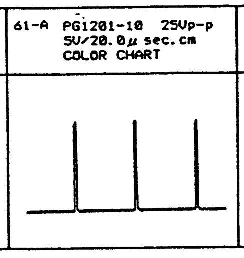

56-A TP1201-4 5.0Vp-p 1V/5.0msec.cm COLOR CHART

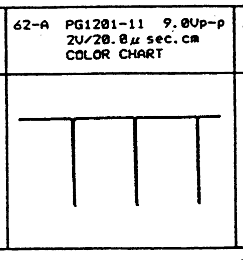

57-A PG1201-2 200mVp-p 0.1V/20.0μ sec.cm COLOR CHART

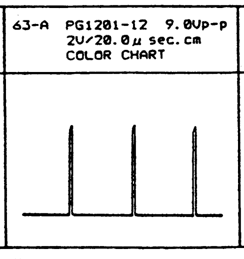

58-A PG1201-7 5.0Vp-p 1V/100nsec.cm COLOR CHART

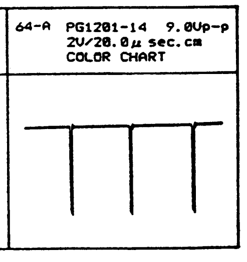

59-A PG1201-8 5.0Vp-p 1V/100nsec.cm COLOR CHART


60-A PG1201-9 9.2Vp-p 2V/20.0μ sec.cm COLOR CHART


61-A PG1201-10 25Vp-p 5V/20.0μ sec.cm COLOR CHART


62-A PG1201-11 9.0Vp-p 2V/20.0μ sec.cm COLOR CHART


63-A PG1201-12 9.0Vp-p 2V/20.0μ sec.cm COLOR CHART

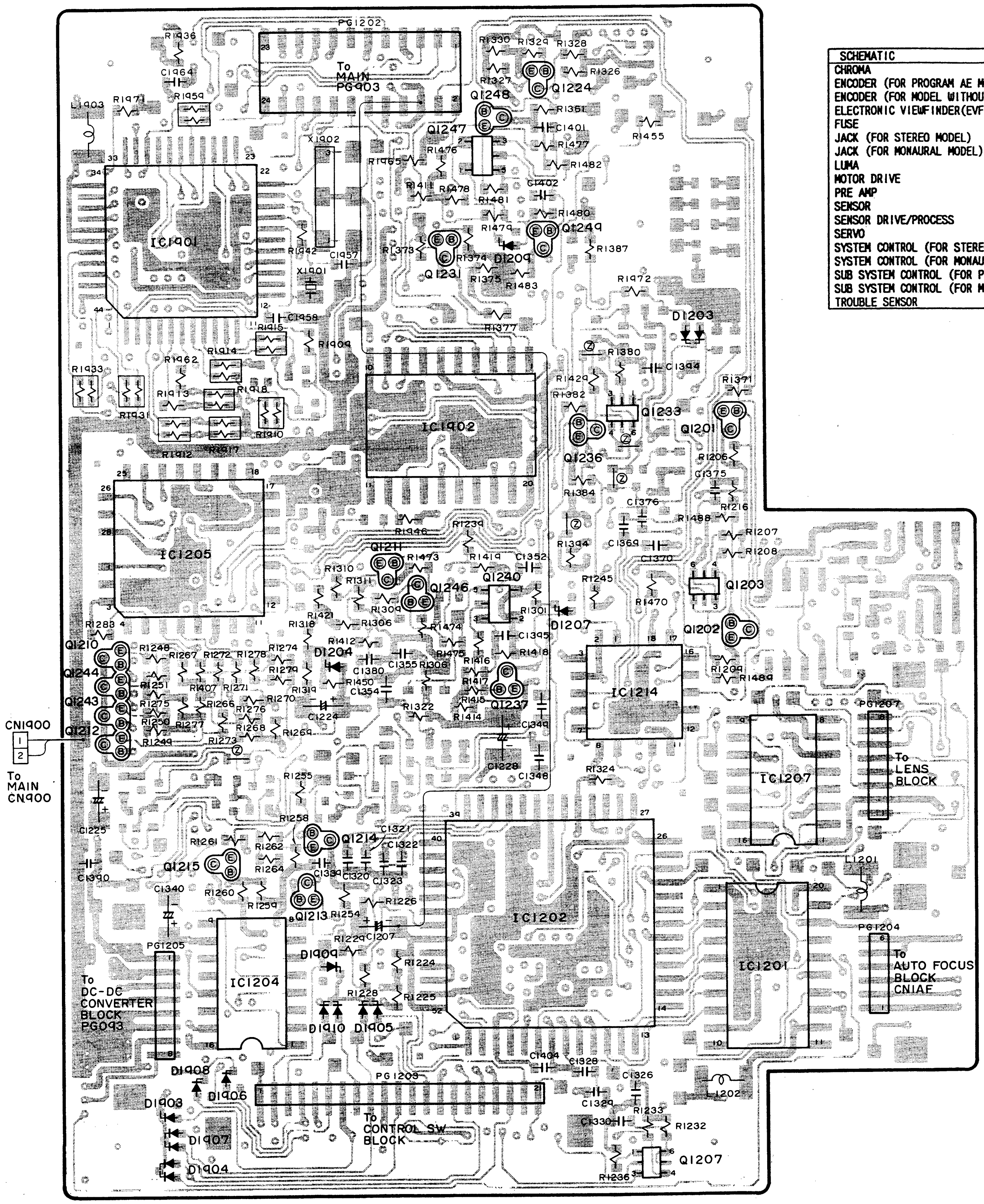

64-A PG1201-14 9.0Vp-p 2V/20.0μ sec.cm COLOR CHART

A

1 2 3 4 5 6 7 8

PROCESS CIRCUIT BOARD — FOR MODEL WITHOUT PROGRAM AE
PROZESS-LEITERPLATTE — FÜR MODELL OHNE PROGRAM AE
CARTE DE CIRCUITS IMPRIMÉS DE TRAITEMENT — CAS DU MODÈLE NON ÉQUIPÉ DE LA FONCTION DE PROGRAMME AE

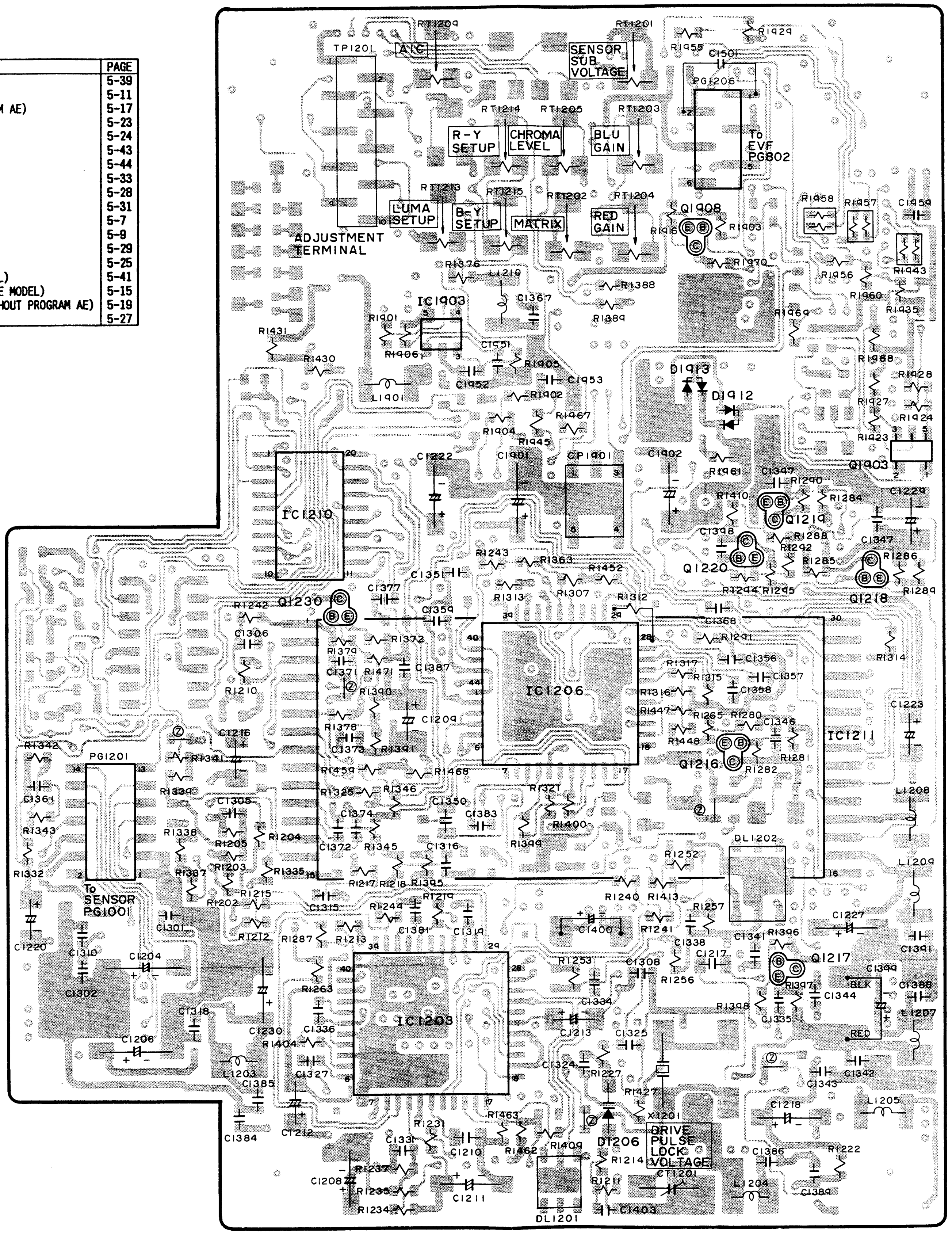
SCHEMATIC	PAGE
CHROMA	5-39
ENCODER (FOR PROGRAM AE MODEL)	5-11
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23
FUSE	5-24
JACK (FOR STEREO MODEL)	5-43
JACK (FOR MONAURAL MODEL)	5-44
LUMA	5-33
MOTOR DRIVE	5-28
PRE AMP	5-31
SENSOR	5-7
SENSOR DRIVE/PROCESS	5-9
SERVO	5-29
SYSTEM CONTROL (FOR STEREO MODEL)	5-25
SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
TROUBLE SENSOR	5-27


PG1202
To MAIN PG903
IC1901
X1902
X1901
L1903
IC1902
IC1205
IC1214
IC1207
IC1202
IC1204
IC1201
CN1900
To MAIN CN900
PG1205
To DC-DC CONVERTER BLOCK PG093
PG1203
To CONTROL SW BLOCK
PG1207
To LENS BLOCK
PG1204
To AUTO FOCUS BLOCK CN1AF
Q1224
Q1248
Q1247
Q1249
Q1231
Q1233
Q1201
Q1236
Q1211
Q1246
Q1240
Q1203
Q1202
Q1237
Q1210
Q1244
Q1243
Q1212
Q1214
Q1215
Q1213
Q1207
D1203
D1204
D1207
D1909
D1910
D1905
D1908
D1906
D1903
D1907
D1904
L1201
L1202

NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

PROCESS P.C.B
(SIDE A)

▨ : SIDE A


TP1201
ADJUSTMENT TERMINAL
RT1209
AFC
RT1201
SENSOR SUB VOLTAGE
RT1214
R-Y SETUP
RT1205
CHROMA LEVEL
RT1203
BLU GAIN
RT1213
LUMA SETUP
RT1215
B-Y SETUP
RT1202
MATRIX
RT1204
RED GAIN
PG1206
To EVF PG802
IC1903
IC1210
IC1206
IC1211
IC1203
PG1201
To SENSOR PG1001
CP1901
Q1908
Q1903
Q1219
Q1220
Q1218
Q1230
Q1216
Q1217
D1913
D1912
D1206
DL1202
DL1201
X1201
CT1201
DRIVE PULSE LOCK VOLTAGE
L1901
L1203
L1204
L1205
L1207
L1208
L1209
BLK
RED

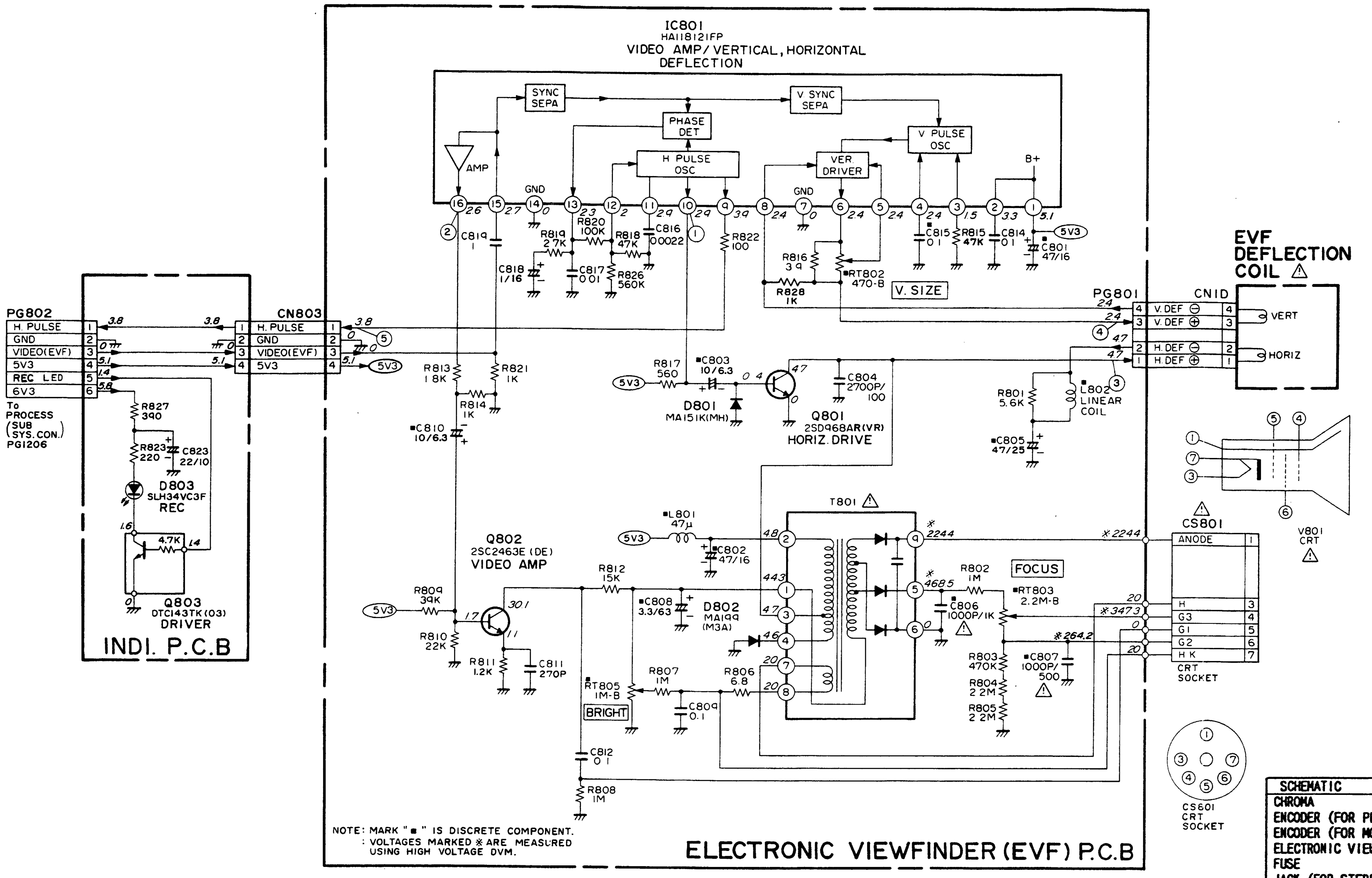
NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

PROCESS P.C.B
(SIDE B)

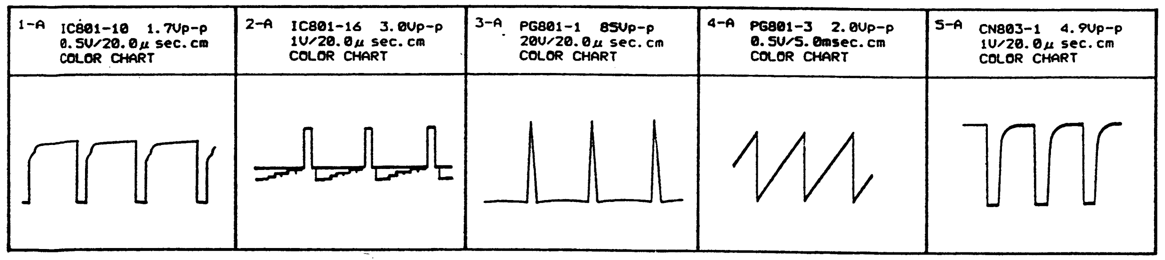
▨ : SIDE B

E
D
C
B
A
1
2
3
4
5
6
7
8

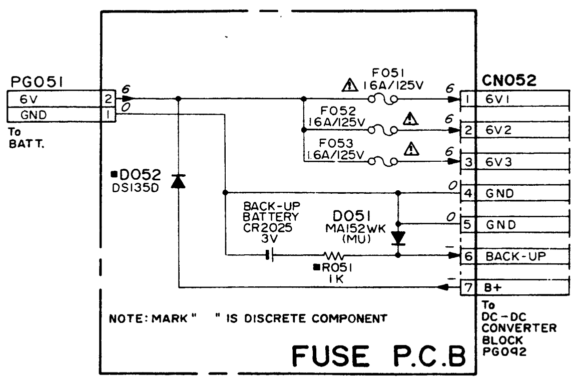
ELECTRONIC VIEWFINDER (EVF)/INDI. SCHEMARTIC
ELEKTRONISCHER SUCHER (EVF)/INDI.-SCHALTPLAN
SCHÉMA DE PRINCIPE DE VISEUR ÉLECTRONIQUE (EVF)/INDICATEUR


IC801
HA11812IFP
VIDEO AMP/ VERTICAL, HORIZONTAL DEFLECTION
SYNC SEPA
V SYNC SEPA
PHASE DET
H PULSE OSC
VER DRIVER
V PULSE OSC
AMP
GND
B+
V. SIZE
RT802 470-B
EVF DEFLECTION COIL ⚠
PG801
CN1D
V.DEF ⊖
V.DEF ⊕
H.DEF ⊖
H.DEF ⊕
VERT
HORIZ
PG802
H. PULSE
GND
VIDEO(EVF)
5V3
REC LED
6V3
To PROCESS (SUB SYS.CON.) PG1206
CN803
D803 SLH34VC3F REC
Q803 DTC143TK(03) DRIVER
INDI. P.C.B
Q801 2SD968AR(VR) HORIZ. DRIVE
D801 MA151K(MH)
L802 LINEAR COIL
Q802 2SC2463E (DE) VIDEO AMP
D802 MA199 (M3A)
T801 ⚠
FOCUS
RT803 2.2M-B
BRIGHT
RT805 1M-B
CS801
ANODE
H
G3
G1
G2
HK
CRT SOCKET
V801 CRT ⚠
CS601 CRT SOCKET
ELECTRONIC VIEWFINDER (EVF) P.C.B

NOTE: MARK "■" IS DISCRETE COMPONENT.
: VOLTAGES MARKED ※ ARE MEASURED USING HIGH VOLTAGE DVM.



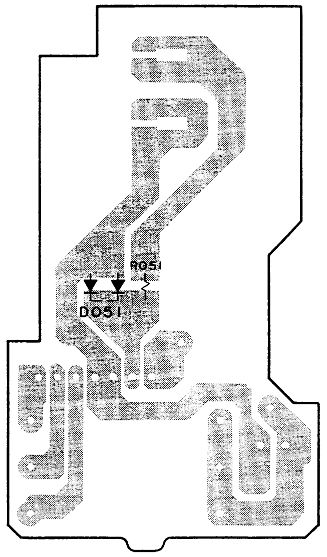
FUSE SCHEMATIC
SICHERUNGS-SCHALTPLAN
SCHÉMA DE PRINCIPE DE FUSIBLE


PG051
6V
GND
To BATT.
F051 ⚠ 1.6A/125V
F052 1.6A/125V ⚠
F053 1.6A/125V ⚠
CN052
6V1
6V2
6V3
GND
GND
BACK-UP
B+
To DC-DC CONVERTER BLOCK PG092
D052 DS1350
BACK-UP BATTERY CR2025 3V
D051 MA152WK (MU)
R051 1K
FUSE P.C.B

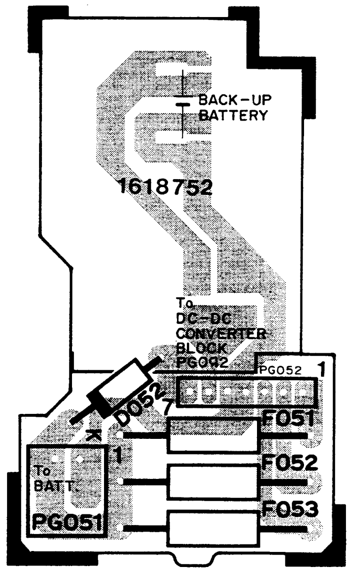
NOTE: MARK " " IS DISCRETE COMPONENT

SCHEMATIC	PAGE
CHROMA	5-39
ENCODER (FOR PROGRAM AE MODEL)	5-11
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23
FUSE	5-24
JACK (FOR STEREO MODEL)	5-43
JACK (FOR MONAURAL MODEL)	5-44
LUMA	5-33
MOTOR DRIVE	5-28
PRE AMP	5-31
SENSOR	5-7
SENSOR DRIVE/PROCESS	5-9
SERVO	5-29
SYSTEM CONTROL (FOR STEREO MODEL)	5-25
SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
TROUBLE SENSOR	5-27

FUSE CIRCUIT BOARD
SICHERUNGS-LEITERPLATTE
CARTE DE CIRCUITS IMPRIMÉS DE FUSIBLE

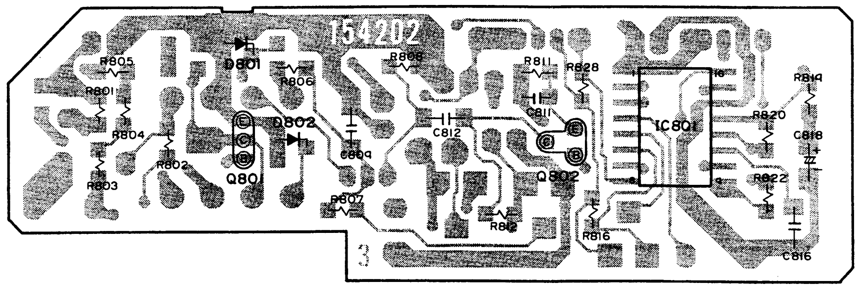


FUSE P.C.B
(SOLDER SIDE)

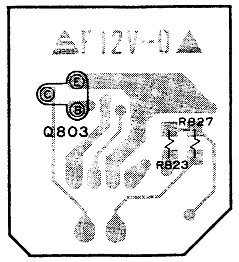

BACK-UP BATTERY
1618752
To DC-DC CONVERTER BLOCK PG092
PG052
D052
F051
F052
F053
To BATT.
PG051

FUSE P.C.B
(COMPONENT SIDE)

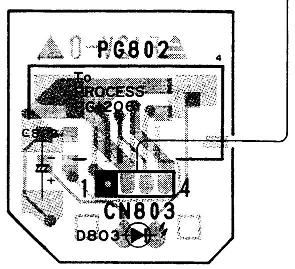
ELECTRONIC VIEWFINDER (EVF)/INDI. CIRCUIT BOARD
ELEKTRONISCHER SUCHER (EVF)/INDI.-LEITERPLATTE
CARTE DE CIRCUITS IMPRIMÉS DE VISEUR ÉLECTRONIQUE (EVF)/INDICATEUR


154202
D801
Q802
Q801
IC801

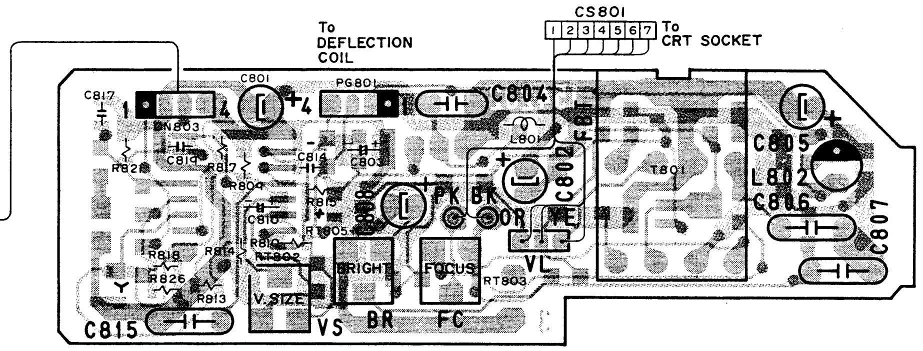
ELECTRONIC VIEWFINDER P.C.B (SOLDER SIDE)



INDI. P.C.B


PG802
To PROCESS
CN803
D803

INDI. P.C.B

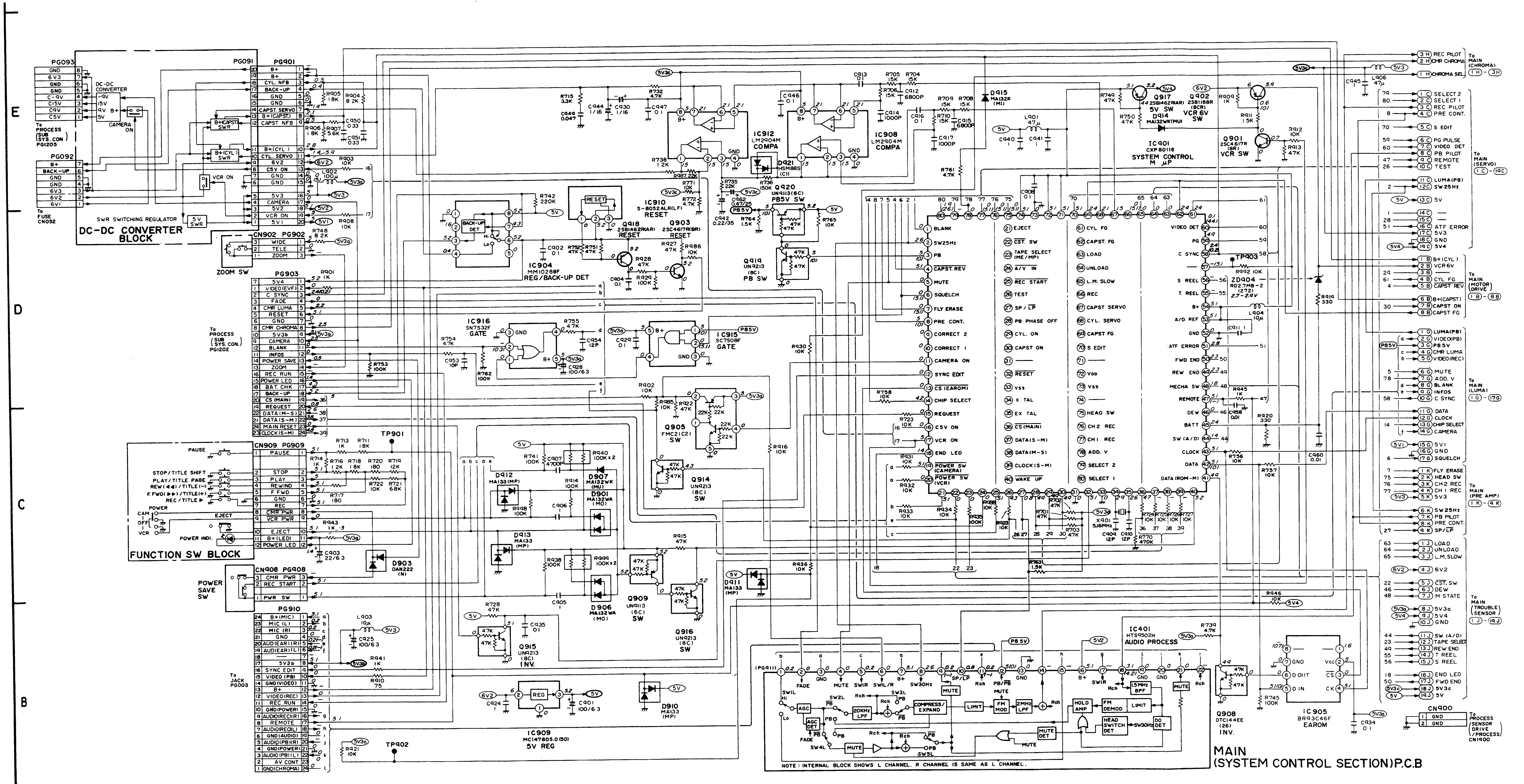

To DEFLECTION COIL
CS801
To CRT SOCKET
PG801
C801
C804
T801
C805
L802
C806
C807
CN803
BRIGHT
FOCUS
V.SIZE
VS
BR
FC
VL
C815

ELECTRONIC VIEWFINDER P.C.B (COMPONENT SIDE)

▨ : SOLDER SIDE

▨ : SOLDER SIDE
▨ : COMPONENT SIDE

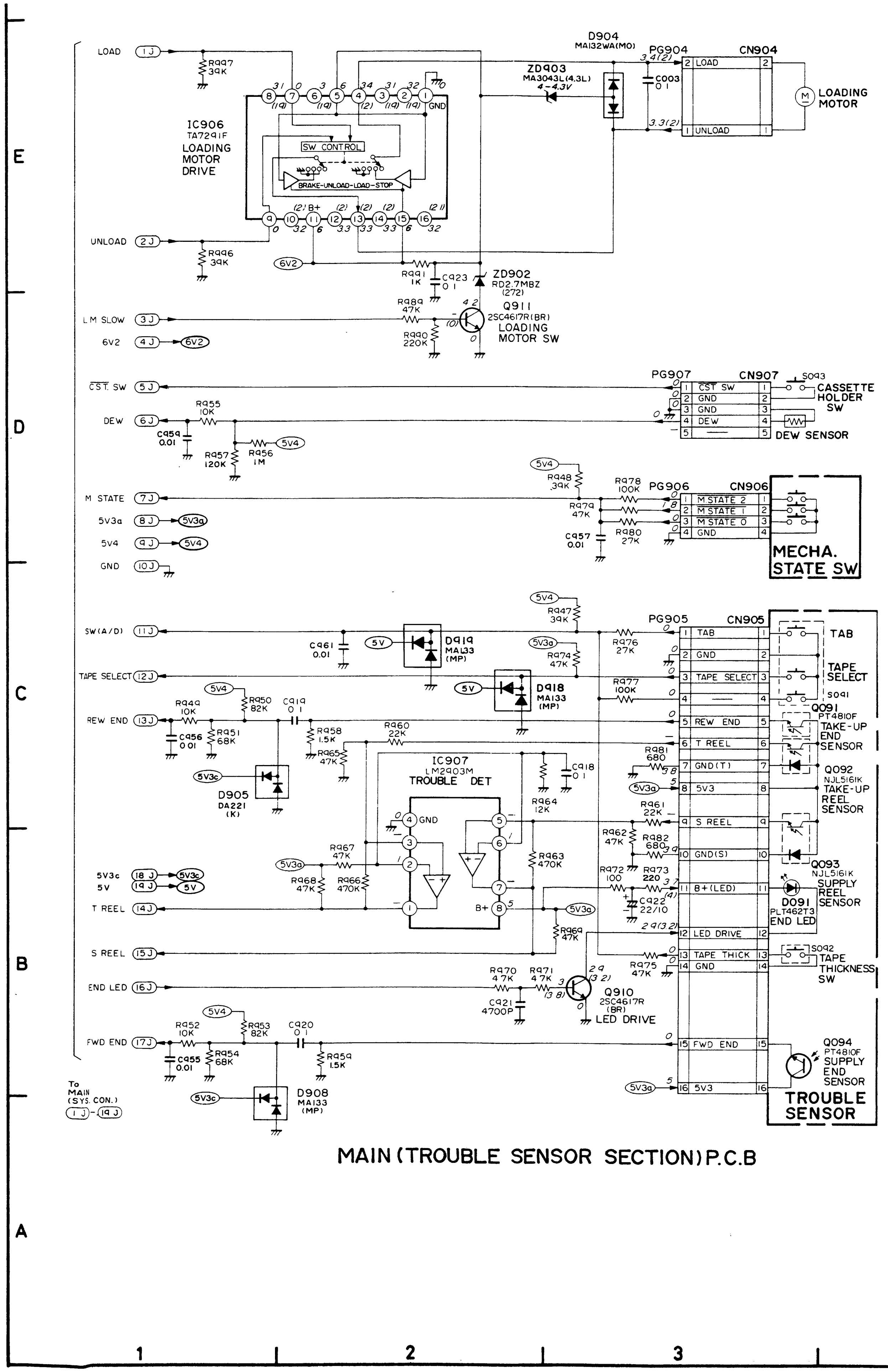
MAIN (SYSTEM CONTROL SECTION) SCHEMATIC — FOR STEREO MODEL
HAUPT- (SYSTEMREGELUNGSABSCHNITT) SCHALTPLAN — FÜR STEREO-MODELL
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION DE COMMANDE DE SYSTÈME) — CAS DU MODÈLE STÉRÉO


E
D
C
B
A
PG093
PG092
PG091
PG901
DC-DC CONVERTER
CAMERA ON
To PROCESS (SUB SYS. CON.) PG1205
To FUSE CN052
SWR SWITCHING REGULATOR
DC-DC CONVERTER BLOCK
CN902 PG902
ZOOM SW
PG903
To PROCESS (SUB SYS. CON.) PG1202
CN909 PG909
FUNCTION SW BLOCK
CN908 PG908
POWER SAVE SW
PG910
To JACK PG003
TP901
TP902
IC904 MM1028BF REG/BACK-UP DET
IC910 S-8052ALR(LF) RESET
Q918 2SB1462R(AR) RESET
Q903 2SC4617R(BR) RESET
IC912 LM2904M COMPA
IC908 LM2904M COMPA
Q920 UN9113(6C) PB5V SW
Q919 UN9213 (8C) PB SW
IC916 SN7S32F GATE
IC915 SC7S08F GATE
Q905 FMC2(C2) SW
Q914 UN9213 (8C) SW
D912 MA133(MP)
D913 MA133 (MP)
D907 MA132WK (MU)
D901 MA132WA (MO)
D906 MA132WA (MO)
D903 DAN222 (N)
Q909 UN9113 (6C) SW
Q916 UN9213 (8C) SW
D911 MA133 (MP)
Q915 UN9213 (8C) INV.
IC909 MC147805.0(50) 5V REG
D910 MA133 (MP)
D915 MA132K (MI)
Q917 2SB1462R(AR) 5V SW
D914 MA132WK(MU)
Q902 2SB1188R (BCR) VCR 6V SW
Q901 2SC4617R (BR) VCR SW
IC901 CXP80116 SYSTEM CONTROL M µP
ZD904 RD2.7MB-2 (272) 2.7-2.4V
TP903
X901 5.16MHz
IC401 HTS9502H AUDIO PROCESS
Q908 DTC144EE (26) INV.
IC905 BR93C46F EAROM
CN900
To PROCESS /SENSOR DRIVE /PROCESS CN1400
To MAIN (CHROMA) (1H)-(3H)
To MAIN (SERVO) (1C)-(19C)
To MAIN (MOTOR DRIVE) (1B)-(8B)
To MAIN (LUMA) (1G)-(17G)
To MAIN (PRE AMP) (1K)-(9K)
To MAIN (TROUBLE SENSOR) (1J)-(19J)
MAIN (SYSTEM CONTROL SECTION) P.C.B
NOTE : INTERNAL BLOCK SHOWS L CHANNEL. R CHANNEL IS SAME AS L CHANNEL.

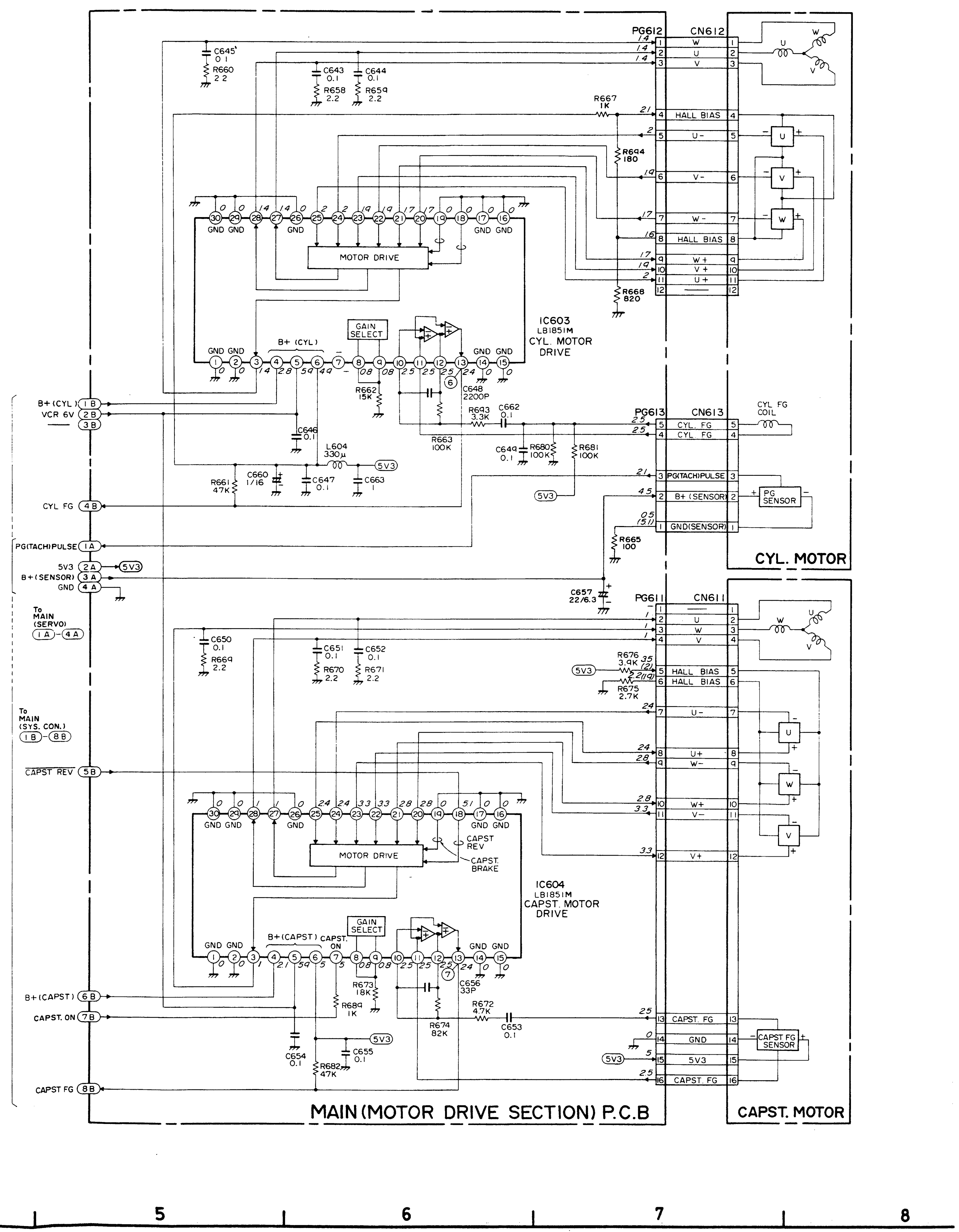
SCHEMATIC	PAGE	SCHEMATIC	PAGE
CHROMA	5-39	PRE AMP	5-31
ENCODER (FOR PROGRAM AE MODEL)	5-11	SENSOR	5-7
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17	SENSOR DRIVE/PROCESS	5-9
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23	SERVO	5-29
FUSE	5-24	SYSTEM CONTROL (FOR STEREO MODEL)	5-25
JACK (FOR STEREO MODEL)	5-43	SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
JACK (FOR MONAURAL MODEL)	5-44	SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
LUMA	5-33	SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
MOTOR DRIVE	5-28	TROUBLE SENSOR	5-27

1 2 3 4 5 6 7 8

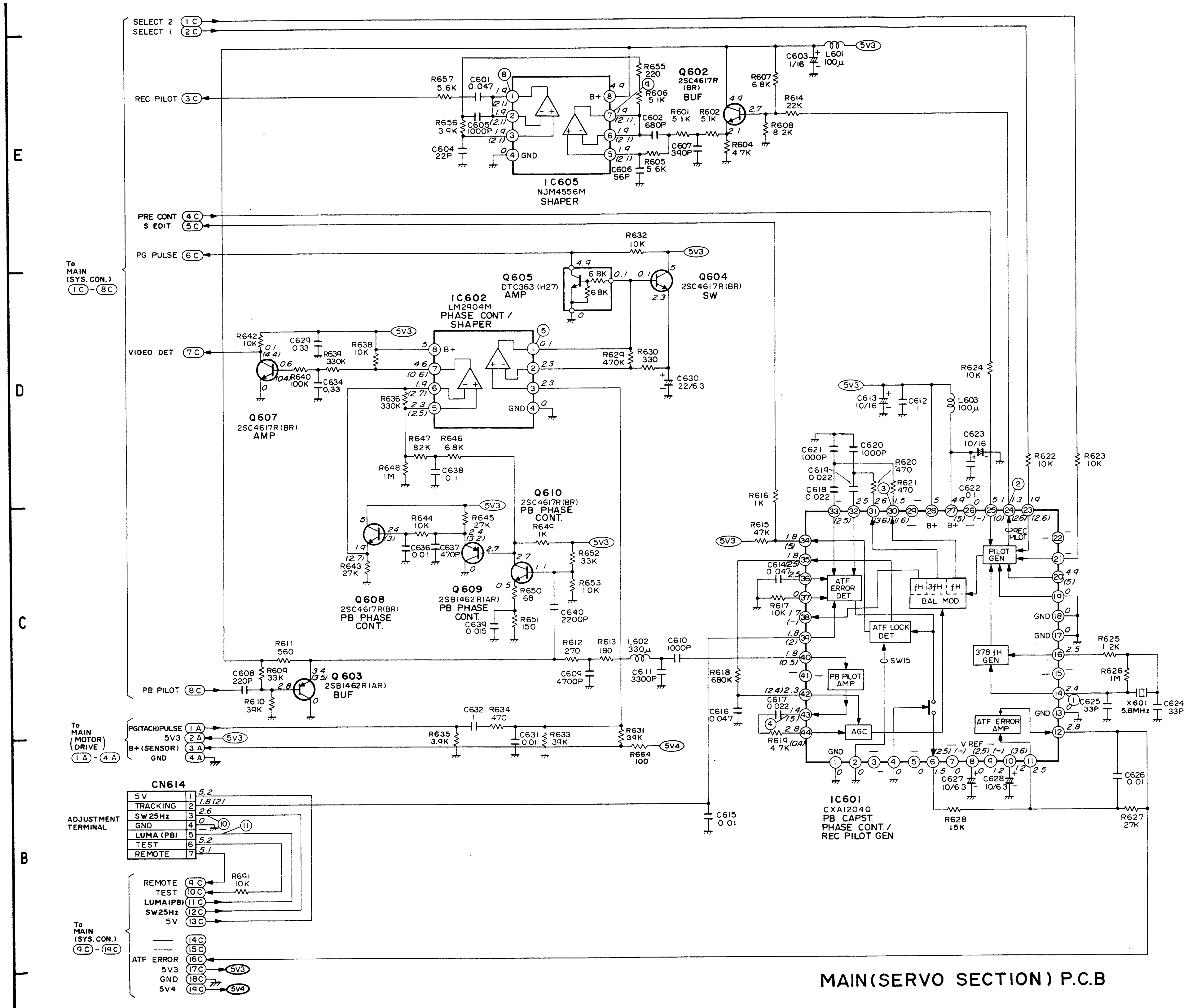
MAIN (TROUBLE SENSOR SECTION) SCHEMATIC
HAUPT- (STÖRUNGSSENSOR-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION DÉTECTEUR DE PANNES)

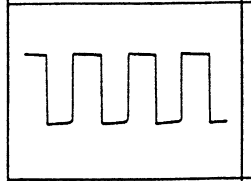

E
D
C
B
A
1
2
3
4
LOAD (1J)
UNLOAD (2J)
LM SLOW (3J)
6V2 (4J)
CST SW (5J)
DEW (6J)
M STATE (7J)
5V3a (8J)
5V4 (9J)
GND (10J)
SW(A/D) (11J)
TAPE SELECT (12J)
REW END (13J)
5V3c (18J)
5V (19J)
T REEL (14J)
S REEL (15J)
END LED (16J)
FWD END (17J)
To MAIN (SYS CON.) (1J)-(19J)
IC906 TA7291F LOADING MOTOR DRIVE
SW CONTROL
BRAKE-UNLOAD-LOAD-STOP
D904 MA132WA(MO)
ZD903 MA3043L(4.3L) 4~4.3V
PG904
CN904
LOAD
UNLOAD
LOADING MOTOR
ZD902 RD2.7MBZ (272)
Q911 2SC4617R(BR) LOADING MOTOR SW
PG907
CN907
CST SW
GND
DEW
S093
CASSETTE HOLDER SW
DEW SENSOR
PG906
CN906
M STATE 2
M STATE 1
M STATE 0
MECHA. STATE SW
PG905
CN905
TAB
TAPE SELECT
S091
REW END
T REEL
GND(T)
5V3
S REEL
GND(S)
B+(LED)
LED DRIVE
TAPE THICK
FWD END
Q091 PT4810F TAKE-UP END SENSOR
Q092 NJL5161K TAKE-UP REEL SENSOR
Q093 NJL5161K SUPPLY REEL SENSOR
D091 PLT462T3 END LED
S092 TAPE THICKNESS SW
Q094 PT4810F SUPPLY END SENSOR
TROUBLE SENSOR
D919 MA133 (MP)
D918 MA133 (MP)
IC907 LM2903M TROUBLE DET
D905 DA221 (K)
D908 MA133 (MP)
Q910 2SC4617R (BR) LED DRIVE
MAIN (TROUBLE SENSOR SECTION) P.C.B

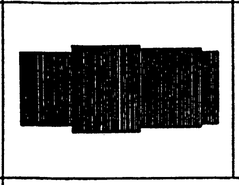
MAIN (MOTOR DRIVE SECTION) SCHEMATIC
HAUPT- (MOTORANTRIEBS-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION EXCITATION DE MOTEUR)

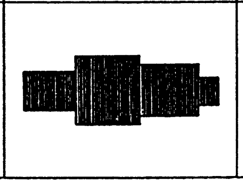

5
6
7
8
B+(CYL) (1B)
VCR 6V (2B)
(3B)
CYL FG (4B)
PG(TACH)PULSE (1A)
5V3 (2A)
B+(SENSOR) (3A)
GND (4A)
To MAIN (SERVO) (1A)-(4A)
To MAIN (SYS. CON.) (1B)-(8B)
CAPST REV (5B)
B+(CAPST) (6B)
CAPST. ON (7B)
CAPST FG (8B)
PG612
CN612
HALL BIAS
U-
V-
W-
W+
V+
U+
MOTOR DRIVE
GAIN SELECT
B+(CYL)
IC603 LB1851M CYL. MOTOR DRIVE
PG613
CN613
CYL. FG
CYL FG COIL
PG(TACH)PULSE
B+(SENSOR)
GND(SENSOR)
PG SENSOR
CYL. MOTOR
PG611
CN611
IC604 LB1851M CAPST. MOTOR DRIVE
B+(CAPST.)
CAPST. ON
CAPST REV
CAPST. BRAKE
CAPST. FG
GND
5V3
CAPST FG SENSOR
CAPST. MOTOR
MAIN (MOTOR DRIVE SECTION) P.C.B

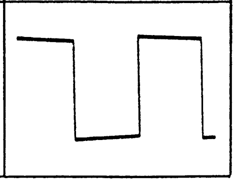
MAIN (SERVO SECTION) SCHEMATIC
HAUPT- (SERVO-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION ASSERVISSEMENT)

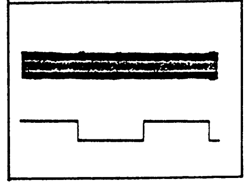

SELECT 2 (1C)
SELECT 1 (2C)
REC PILOT (3C)
PRE CONT (4C)
S EDIT (5C)
PG PULSE (6C)
VIDEO DET (7C)
PB PILOT (8C)
To MAIN (SYS. CON.) (1C)-(8C)
To MAIN (MOTOR DRIVE) (1A)-(4A)
PG(TACH)PULSE (1A)
5V3 (2A)
B+(SENSOR) (3A)
GND (4A)
IC605 NJM4556M SHAPER
Q602 2SC4617R (BR) BUF
IC602 LM2904M PHASE CONT / SHAPER
Q605 DTC363 (H27) AMP
Q604 2SC4617R (BR) SW
Q607 2SC4617R (BR) AMP
Q608 2SC4617R(BR) PB PHASE CONT.
Q609 2SB1462R(AR) PB PHASE CONT
Q610 2SC4617R(BR) PB PHASE CONT.
Q603 2SB1462R(AR) BUF
IC601 CXA1204Q PB CAPST. PHASE CONT / REC PILOT GEN
ATF ERROR DET
fH 3fH fH BAL MOD
PILOT GEN
ATF LOCK DET
SW15
PB PILOT AMP
AGC
378 fH GEN
ATF ERROR AMP
V REF
REC PILOT
X601 5.8MHz
L601 100µ
L602 330µ
L603 100µ
5V3
5V4
CN614
ADJUSTMENT TERMINAL
5V 1
TRACKING 2
SW25Hz 3
GND 4
LUMA (PB) 5
TEST 6
REMOTE 7
To MAIN (SYS. CON.) (9C)-(19C)
REMOTE (9C)
TEST (10C)
LUMA(PB) (11C)
SW25Hz (12C)
5V (13C)
(14C)
(15C)
ATF ERROR (16C)
5V3 (17C)
GND (18C)
5V4 (19C)
MAIN(SERVO SECTION) P.C.B
E
D
C
B
A
1
2
3
4
5
6
7
8

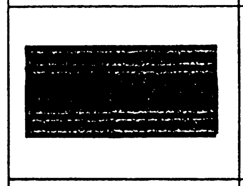

7-A IC604-13 5.0Vp-p
1V/500µ sec.cm
REC/PLAY

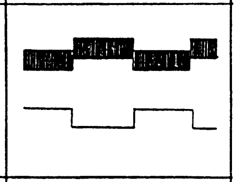

8-A IC605-1 430mVp-p
0.1V/5.0msec.cm
REC

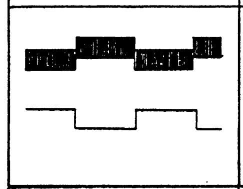

9-A IC605-7 330mVp-p
0.1V/5.0msec.cm
REC

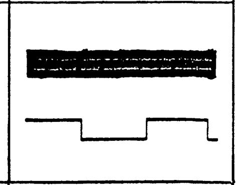

10-A CN614-3 5.0Vp-p
1V/5.0msec.cm
REC/PLAY

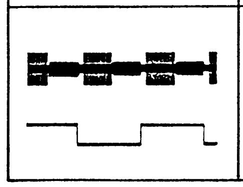

11-B CN614-5 220mVp-p
0.1V/5.0msec.cm
PLAY

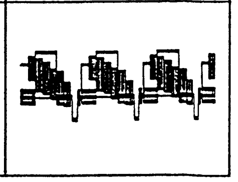

25-A IC204-10 420mVp-p
0.1V/20.0µ sec.cm
REC/PLAY

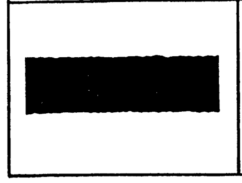

26-B IC206-6 80mVp-p
50mV/5.0msec.cm
PLAY

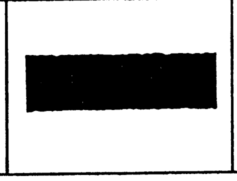

27-B IC206-7 60mVp-p
50mV/5.0msec.cm
PLAY

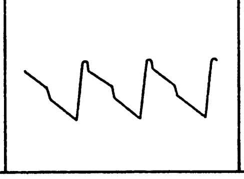

28-A IC209-6 2.0Vp-p
1V/5.0msec.cm
REC

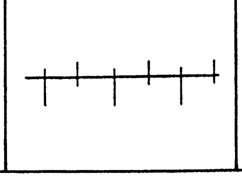

36-A TP213 110mVp-p
0.1V/5.0msec.cm
REC

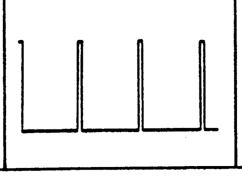

38-A TP217 440mVp-p
0.1V/20.0µ sec.cm
REC/PLAY

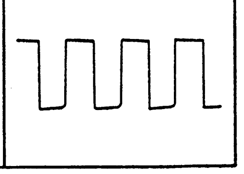

1-A IC601-14 3.5Vp-p
1V/20.0µ sec.cm
REC/PLAY


2-A IC601-24 2.5Vp-p
1V/20.0µ sec.cm
REC


3-A IC601-30 300mVp-p
0.1V/200nsec.cm
REC

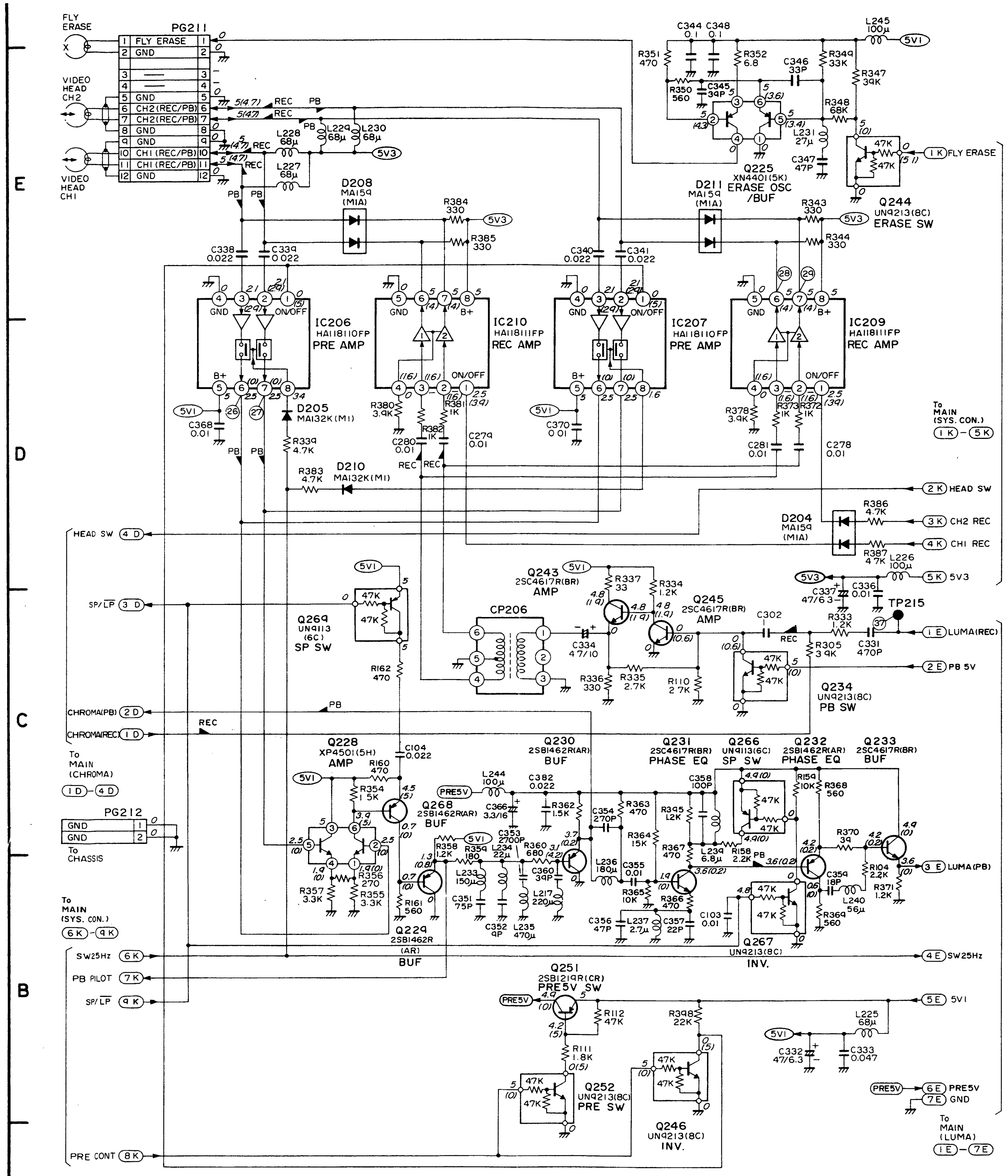

4-B IC601-43 1.2Vp-p
0.5V/10.0msec.cm
PLAY


5-A IC602-1 2.8Vp-p
0.5V/10.0msec.cm
REC/PLAY


6-A IC603-13 5.0Vp-p
1V/500µ sec.cm
REC/PLAY

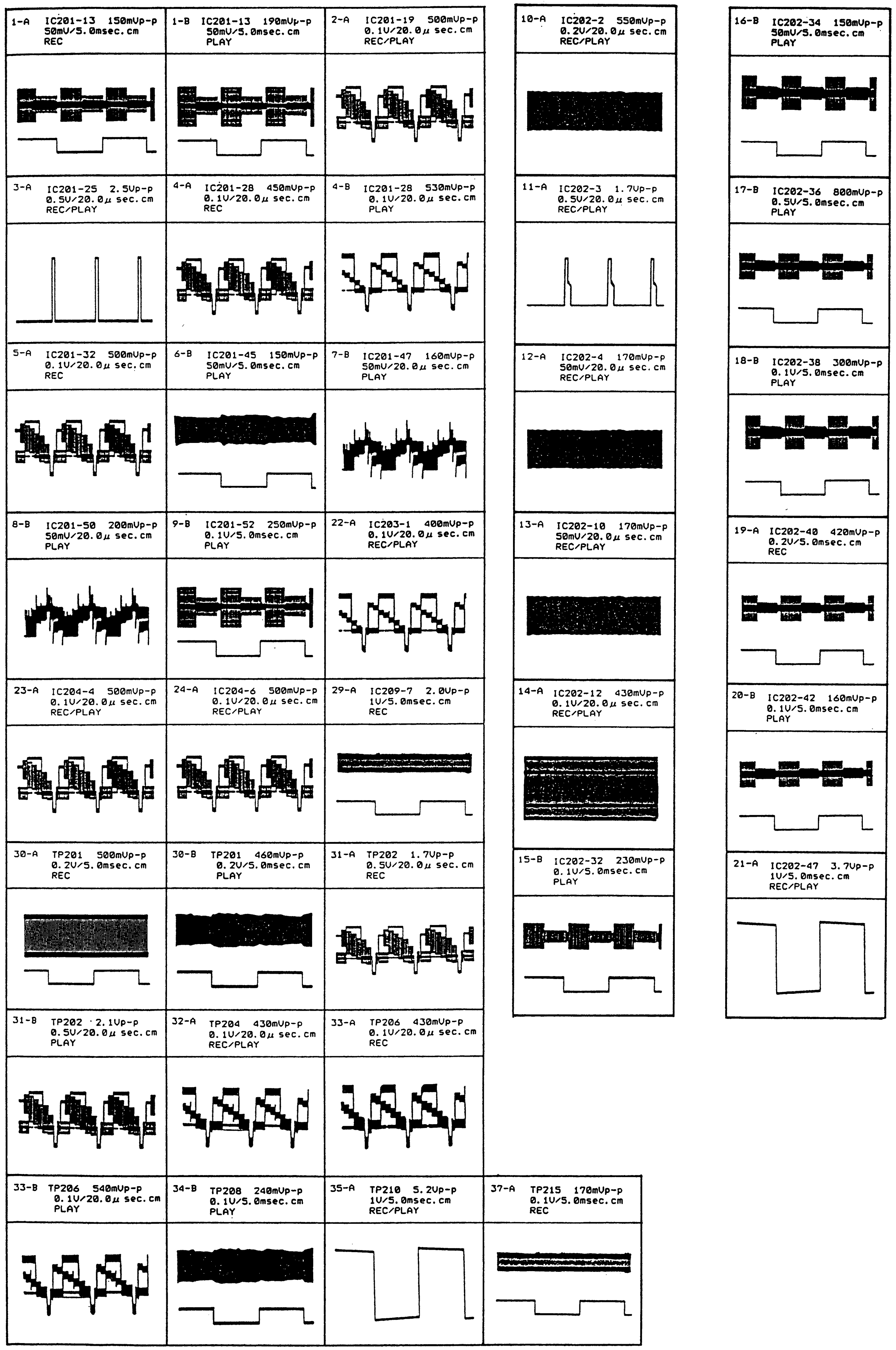
SCHEMATIC	PAGE	SCHEMATIC	PAGE
CHROMA	5-39	PRE AMP	5-31
ENCODER (FOR PROGRAM AE MODEL)	5-11	SENSOR	5-7
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17	SENSOR DRIVE/PROCESS	5-9
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23	SERVO	5-29
FUSE	5-24	SYSTEM CONTROL (FOR STEREO MODEL)	5-25
JACK (FOR STEREO MODEL)	5-43	SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
JACK (FOR MONAURAL MODEL)	5-44	SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
LUMA	5-33	SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
MOTOR DRIVE	5-28	TROUBLE SENSOR	5-27

MAIN (PRE AMP SECTION) SCHEMATIC
HAUPT- (VORVERSTÄRKER-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION PRÉAMPLIFICATEUR)

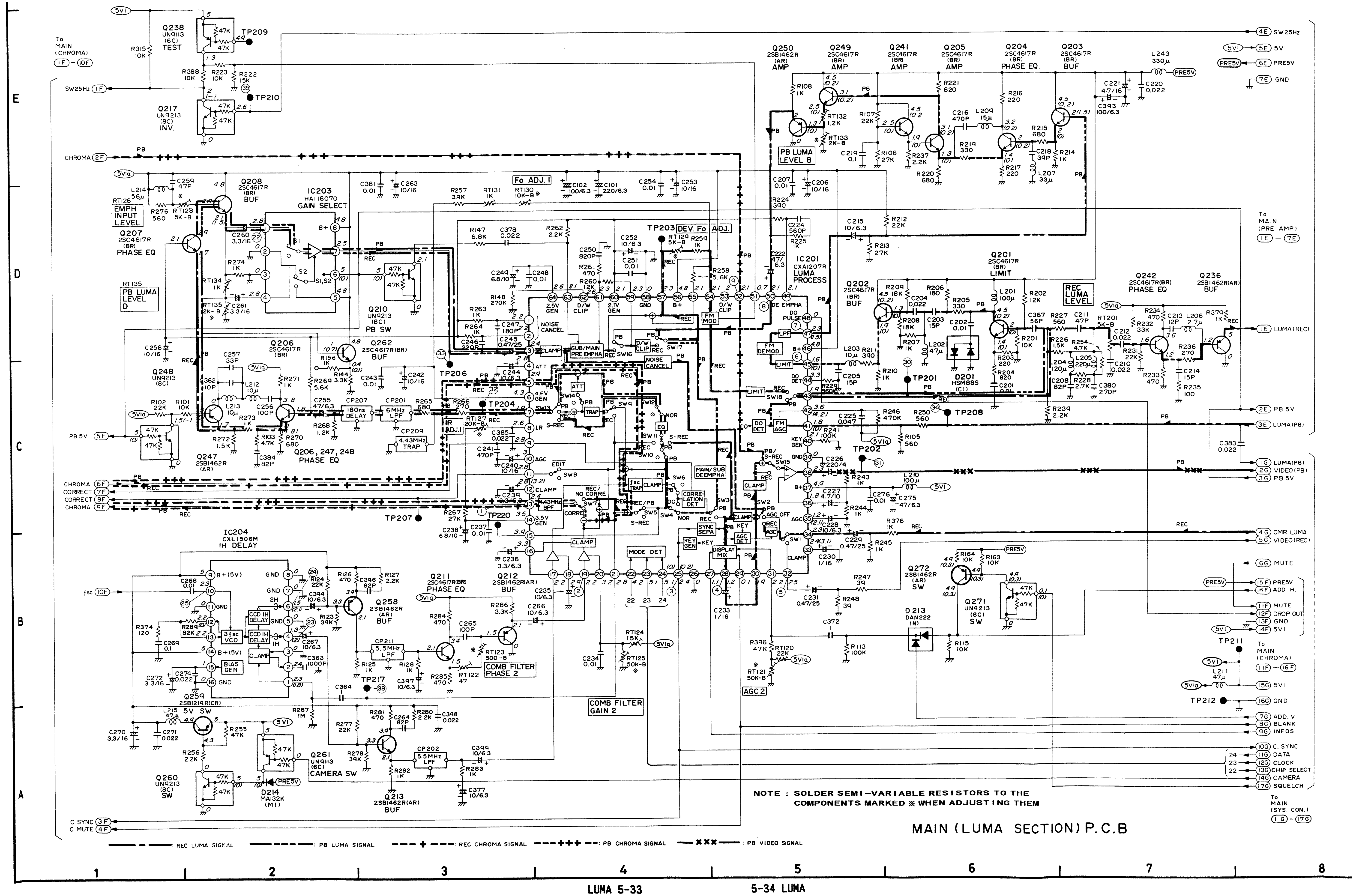

FLY ERASE
PG211
FLY ERASE
GND
VIDEO HEAD CH2
CH2 (REC/PB)
CH1 (REC/PB)
VIDEO HEAD CH1
REC
PB
L228 68μ
L229 68μ
L230 68μ
L227 68μ
5V3
D208 MA159 (M1A)
R384 330
R385 330
C338 0.022
C339 0.022
C340 0.022
C341 0.022
IC206 HA11811OFP PRE AMP
IC210 HA11811FP REC AMP
IC207 HA11811OFP PRE AMP
IC209 HA11811FP REC AMP
GND
B+
ON/OFF
D205 MA132K(M1)
D210 MA132K(M1)
R339 4.7K
R383 4.7K
C368 0.01
C370 0.01
R380 3.9K
R382 1K
R381 1K
C280 0.01
C274 0.01
R378 3.9K
R373 1K
R372 1K
C281 0.01
C278 0.01
C344 0.1
C348 0.1
R351 470
R352 6.8
R350 560
C345 34P
C346 33P
R349 33K
R347 39K
R348 68K
L231 27μ
C347 47P
L245 100μ
5V1
Q225 XN4401(5K) ERASE OSC /BUF
D211 MA159 (M1A)
R343 330
R344 330
Q244 UN9213(8C) ERASE SW
1K FLY ERASE
To MAIN (SYS. CON.) 1K - 5K
2K HEAD SW
D204 MA159 (M1A)
R386 4.7K
R387 4.7K
3K CH2 REC
4K CH1 REC
L226 100μ
5K 5V3
HEAD SW 4D
SP/LP 3D
Q269 UN9113 (6C) SP SW
R162 470
CP206
Q243 2SC4617(BR) AMP
R337 33
R334 1.2K
Q245 2SC4617(BR) AMP
C334 47/10
R336 330
R335 2.7K
R110 2.7K
C302
C337 47/6.3
C336 0.01
R333 1.2K
TP215
R305 3.9K
C331 470P
1E LUMA(REC)
2E PB 5V
Q234 UN9213(8C) PB SW
CHROMA(PB) 2D
CHROMA(REC) 1D
To MAIN (CHROMA) 1D - 4D
PG212
GND
To CHASSIS
Q228 XP4501(5H) AMP
R160 470
C104 0.022
R354 1.5K
R356 270
R355 3.3K
R357 3.3K
R161 560
Q229 2SB1462R (AR) BUF
Q268 2SB1462R(AR) BUF
L244 100μ
C366 3.3/16
C382 0.022
R362 1.5K
Q230 2SB1462R(AR) BUF
R358 1.2K
R359 180
L233 150μ
C353 2700P
L234 22μ
R360 680
C360 34P
C351 75P
C352 9P
L235 470μ
L217 220μ
C354 270P
L236 180μ
C355 0.01
R365 10K
Q231 2SC4617(BR) PHASE EQ
R363 470
R364 15K
C358 100P
R345 12K
R367 470
L239 6.8μ
R158 2.2K
R366 470
C356 47P
L237 2.7μ
C357 22P
C103 0.01
Q266 UN4113(6C) SP SW
Q232 2SB1462R(AR) PHASE EQ
R159 10K
R368 560
Q233 2SC4617(BR) BUF
R370 39
C359 18P
R104 2.2K
R371 1.2K
L240 56μ
R369 560
Q267 UN9213(8C) INV.
3E LUMA(PB)
To MAIN (SYS. CON.) 6K - 9K
SW25Hz 6K
PB PILOT 7K
SP/LP 9K
4E SW25Hz
Q251 2SB1219R(CR) PRE5V SW
PRE5V
R112 47K
R111 1.8K
Q252 UN9213(8C) PRE SW
R398 22K
Q246 UN9213(8C) INV.
5E 5V1
L225 68μ
C332 47/6.3
C333 0.047
6E PRE5V
7E GND
To MAIN (LUMA) 1E - 7E
PRE CONT 8K
E
D
C
B
A

MAIN (PRE AMP SECTION) P.C.B

SCHEMATIC	PAGE	SCHEMATIC	PAGE
CHROMA	5-39	PRE AMP	5-31
ENCODER (FOR PROGRAM AE MODEL)	5-11	SENSOR	5-7
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17	SENSOR DRIVE/PROCESS	5-9
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23	SERVO	5-29
FUSE	5-24	SYSTEM CONTROL (FOR STEREO MODEL)	5-25
JACK (FOR STEREO MODEL)	5-43	SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
JACK (FOR MONAURAL MODEL)	5-44	SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
LUMA	5-33	SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
MOTOR DRIVE	5-28	TROUBLE SENSOR	5-27



MAIN (LUMA SECTION) SCHEMATIC
HAUPT (LUMINANCE-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION DE LUMINANCE)


Q238 UN9113 (6C) TEST
TP209
To MAIN (CHROMA) 1F - 10F
SW25Hz 1F
Q217 UN9213 (8C) INV.
TP210
CHROMA 2F
RT128 EMPH. INPUT LEVEL
Q208 2SC4617R (BR) BUF
IC203 HA118070 GAIN SELECT
Q207 2SC4617R (BR) PHASE EQ
RT135 PB LUMA LEVEL D
Q210 UN9213 (8C) PB SW
Q206 2SC4617R (BR)
Q262 2SC4617R(BR) BUF
Q248 UN9213 (8C)
Q247 2SB1462R (AR)
Q206, 247, 248 PHASE EQ
180ns DELAY
6MHz LPF
4.43MHz TRAP
PB 5V 5F
CHROMA 6F
CORRECT 7F
CORRECT 8F
CHROMA 9F
TP206
TP204
IR ADJ.I
TP207
TP220
Fo ADJ. I
TP203 DEV. Fo ADJ.
IC201 CXA1207R LUMA PROCESS
NOISE CANCEL
CLAMP
SUB/MAIN PRE EMPHA
D/W CLIP
FM MOD
ATT
TRAP
EQ
fsc TRAP
CORRELATION DET
MAIN/SUB DEEMPHA
4.43MHz BPF
SYNC SEPA
KEY GEN
DISPLAY MIX
AGC DET
MODE DET
AGC 2
COMB FILTER GAIN 2
COMB FILTER PHASE 2
FM DEMOD
LIMIT
DO DET
FM AGC
Q250 2SB1462R (AR) AMP
Q249 2SC4617R (BR) AMP
Q241 2SC4617R (BR) AMP
Q205 2SC4617R (BR) AMP
Q204 2SC4617R (BR) PHASE EQ
Q203 2SC4617R (BR) BUF
PB LUMA LEVEL B
Q201 2SC4617R (BR) LIMIT
Q202 2SC4617R (BR) BUF
D201 HSM88S (C1)
TP201
TP208
TP202
REC LUMA LEVEL
Q242 2SC4617R(BR) PHASE EQ
Q236 2SB1462R(AR) BUF
To MAIN (PRE AMP) 1E - 7E
4E SW25Hz
5E 5V1
6E PRE5V
7E GND
1E LUMA(REC)
2E PB 5V
3E LUMA(PB)
1G LUMA(PB)
2G VIDEO(PB)
3G PB 5V
4G CMR LUMA
5G VIDEO(REC)
6G MUTE
15F PRE5V
16F ADD H.
11F MUTE
12F DROP OUT
13F GND
14F 5V1
TP211
To MAIN (CHROMA) 11F - 16F
15G 5V1
TP212
16G GND
7G ADD. V
8G BLANK
9G INFOS
10G C. SYNC
11G DATA
12G CLOCK
13G CHIP SELECT
14G CAMERA
17G SQUELCH
To MAIN (SYS. CON.) 1G - 17G
Q272 2SB1462R (AR) SW
Q271 UN9213 (8C) SW
D213 DAN222 (N)
IC204 CXL1506M 1H DELAY
fsc 10F
3fsc VCO
CCD 1H DELAY
C_AMP
BIAS GEN
Q258 2SB1462R (AR) BUF
Q211 2SC4617R(BR) PHASE EQ
Q212 2SB1462R(AR) BUF
TP217
5.5MHz LPF
Q259 2SB1219R(CR) 5V SW
Q260 UN9213 (8C) SW
Q261 UN9113 (6C) CAMERA SW
D214 MA132K (M1)
Q213 2SB1462R(AR) BUF
C SYNC 3F
C MUTE 4F
A
B
C
D
E
1
2
3
4
5
6
7
8

NOTE : SOLDER SEMI-VARIABLE RESISTORS TO THE COMPONENTS MARKED ※ WHEN ADJUSTING THEM

MAIN (LUMA SECTION) P.C.B

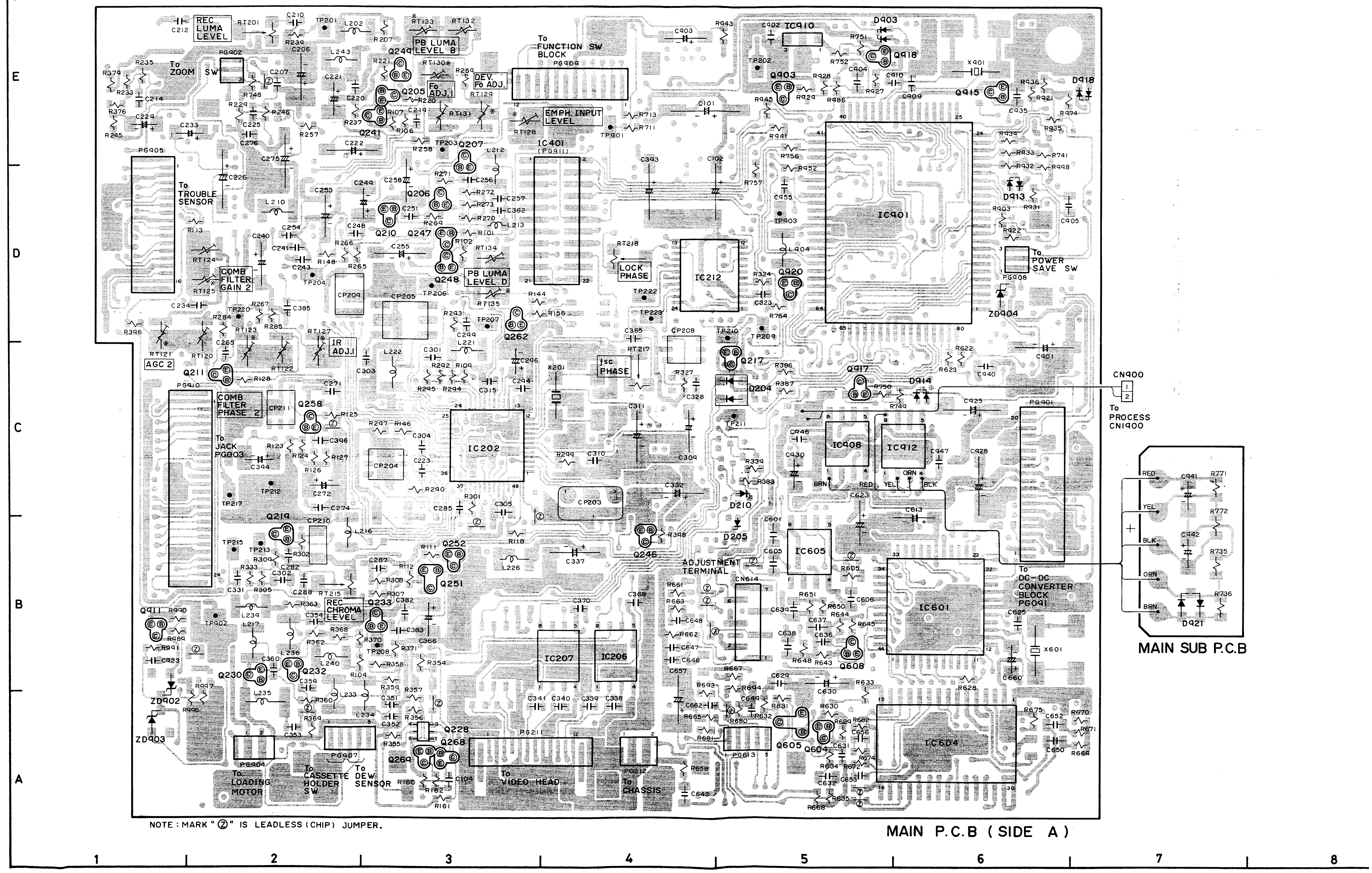
—— — — : REC LUMA SIGNAL　—— ----- : PB LUMA SIGNAL　--- + ---- : REC CHROMA SIGNAL　---+++-- : PB CHROMA SIGNAL　—— ××× —— : PB VIDEO SIGNAL

MAIN CIRCUIT BOARD (SIDE A)
HAUPT-LEITERPLATTE (SEITE A)
CARTE DE CIRCUITS IMPRIMÉS PRINCIPAL (FACE A)

▨ : SIDE A

NOTE : SOLDER SEMI-VARIABLE RESISTORS TO THE COMPONENTS MARKED ※ WHEN ADJUSTING THEM

NOTE : SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN THE CASE IS OPENED AND SIDE B IS THE OTHER SIDE

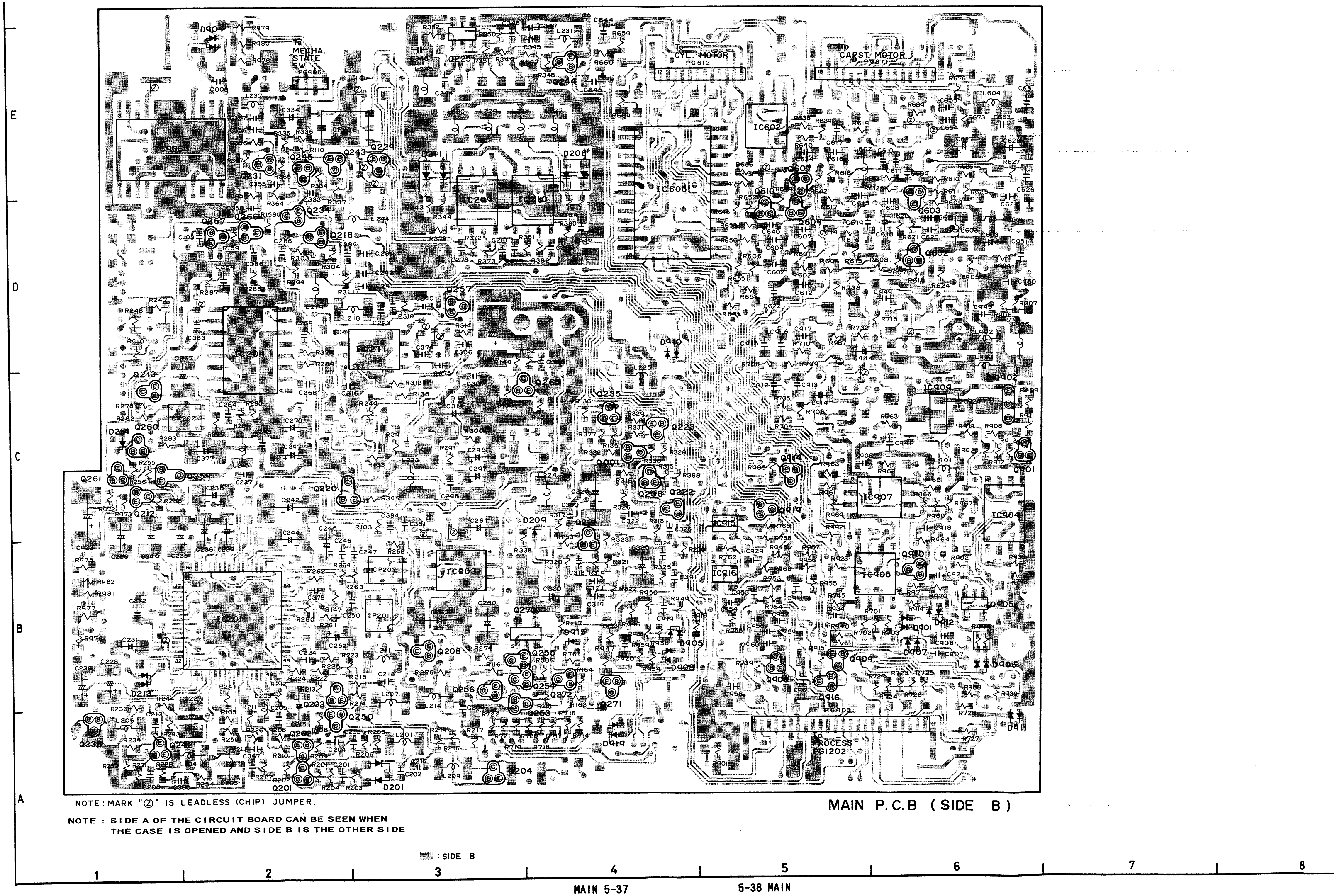


E
D
C
B
A
1
2
3
4
5
6
7
8
REC LUMA LEVEL
PB LUMA LEVEL B
To ZOOM SW
PG902
Fo ADJ.
DEV. Fo ADJ.
EMPH. INPUT LEVEL
To FUNCTION SW BLOCK
PG909
IC401 (PG911)
IC910
D903
Q918
Q903
Q915
D918
X901
C101
IC901
To TROUBLE SENSOR
PG905
COMB FILTER GAIN 2
PB LUMA LEVEL D
LOCK PHASE
IC212
Q920
To POWER SAVE SW
PG908
ZD904
D913
AGC 2
IR ADJ.
fsc PHASE
X201
Q217
D204
Q917
D914
CN900
To PROCESS CN1900
COMB FILTER PHASE 2
PG910
To JACK PG003
IC202
CP204
CP203
IC908
IC912
PG901
MAIN SUB P.C.B
RED
YEL
BLK
ORN
BRN
D921
D210
D205
Q246
ADJUSTMENT TERMINAL
CN614
IC605
IC601
To DC-DC CONVERTER BLOCK PG091
X601
REC CHROMA LEVEL
Q233
Q251
Q252
Q219
Q911
ZD902
ZD903
Q230
Q232
IC207
IC206
Q228
Q268
Q269
Q605
Q604
Q608
IC604
PG904
To LOADING MOTOR
PG907
To CASSETTE HOLDER SW
To DEW SENSOR
PG211
To VIDEO HEAD
PG212
To CHASSIS
PG613

NOTE : MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

MAIN P.C.B (SIDE A)

MAIN CIRCUIT BOARD (SIDE B)
HAUPT-LEITERPLATTE (SEITE B)
CARTE DE CIRCUITS IMPRIMÉS PRINCIPAL (FACE B)



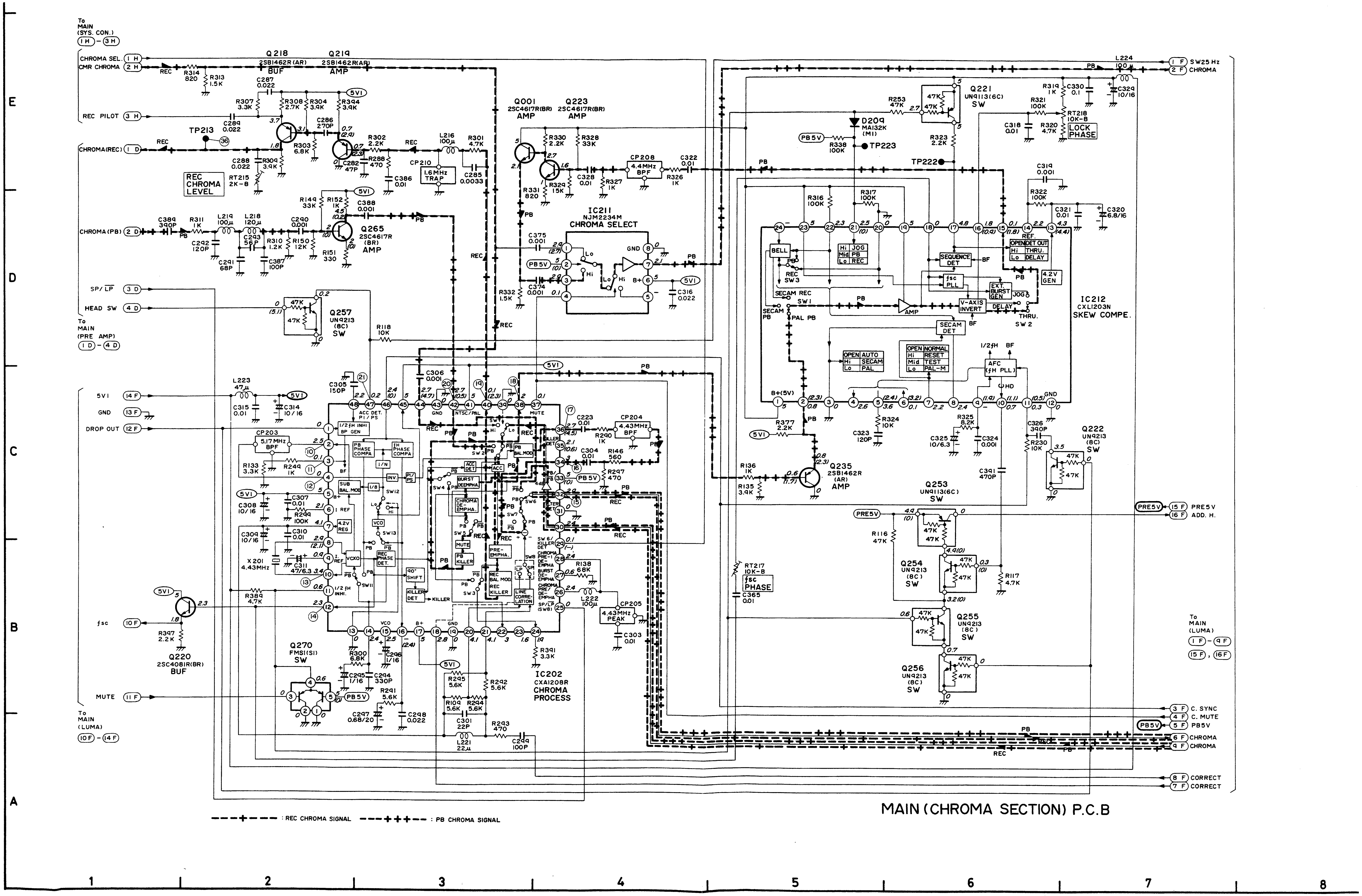
E
D
C
B
A
1
2
3
4
5
6
7
8
To MECHA. STATE SW PG906
To CYL. MOTOR PG612
To CAPST. MOTOR PG611
To PROCESS PG1202
IC906
IC204
IC201
IC203
IC211
IC209
IC210
IC602
IC603
IC909
IC907
IC904
IC905
IC915
IC916
CP202
CP206
CP207
CP201
▨ : SIDE B

NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

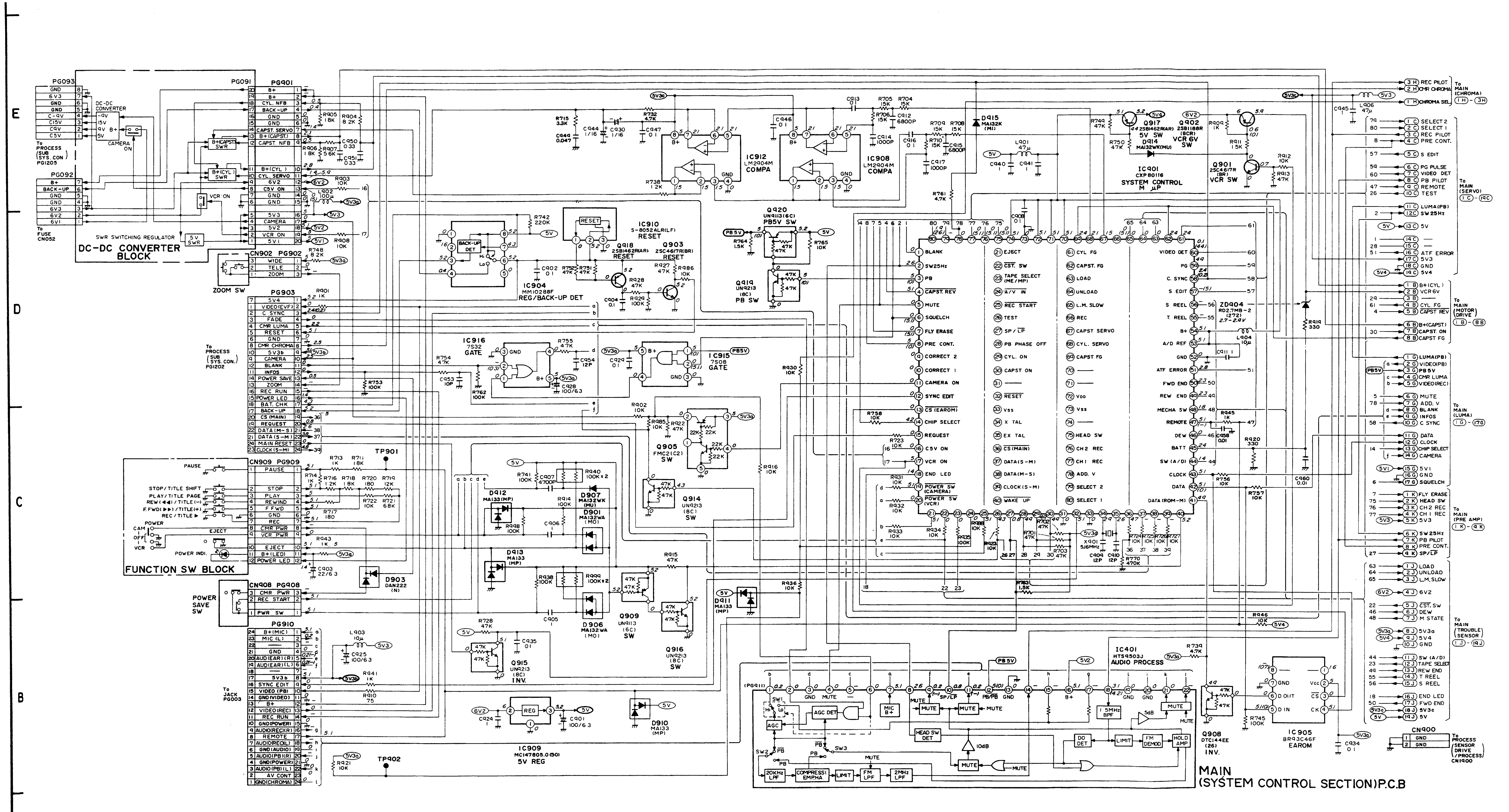
MAIN P.C.B (SIDE B)

NOTE : SIDE A OF THE CIRCUIT BOARD CAN BE SEEN WHEN THE CASE IS OPENED AND SIDE B IS THE OTHER SIDE

MAIN (CHROMA SECTION) SCHEMATIC
HAUPT- (CHROMA-ABSCHNITT) SCHALTPLAN
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION DE CHROMINANCE)

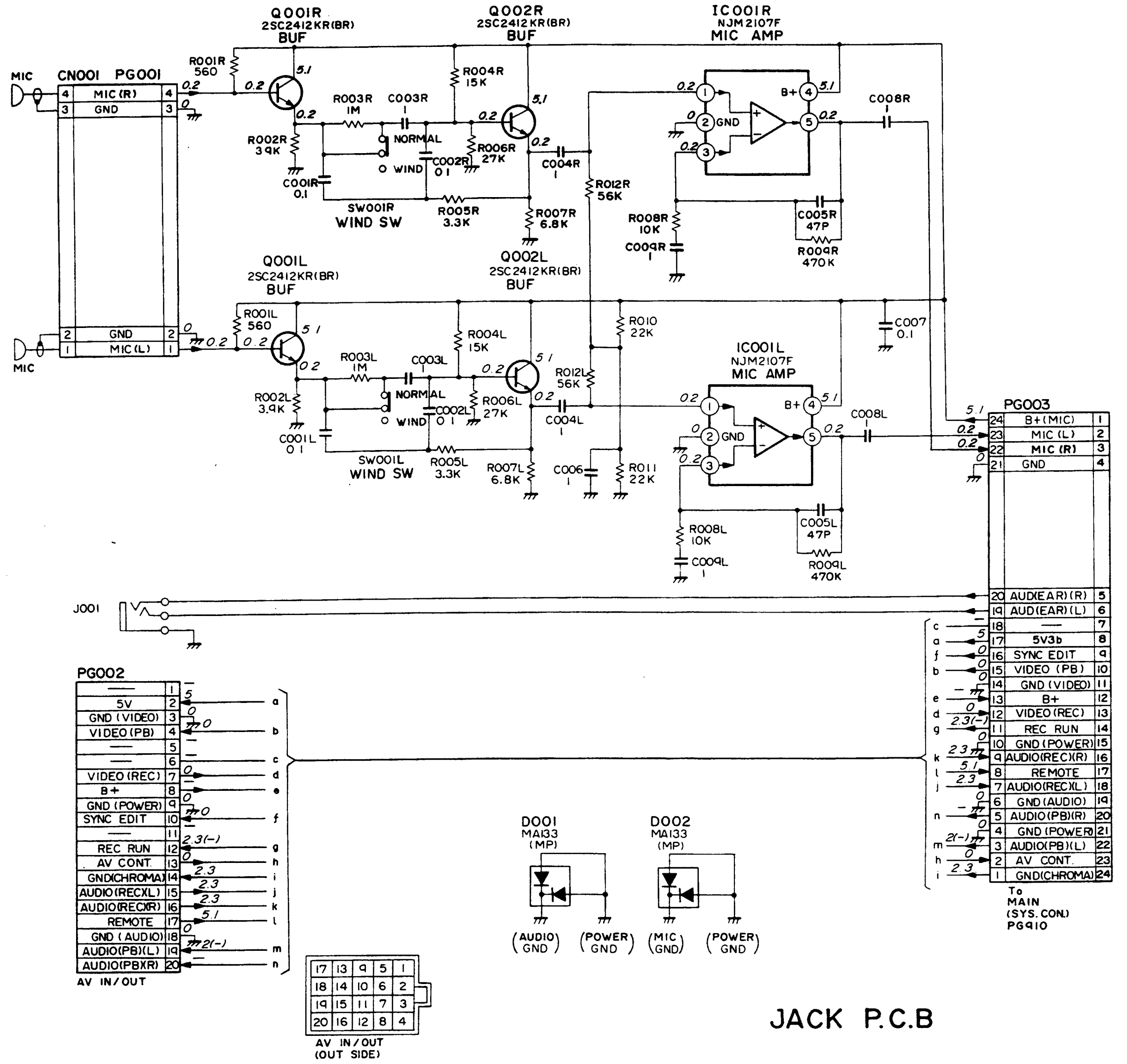

MAIN (CHROMA SECTION) P.C.B
To MAIN (SYS. CON.) (1H)-(3H)
CHROMA SEL. (1H)
CMR CHROMA (2H)
REC PILOT (3H)
CHROMA(REC) (1D)
CHROMA (PB) (2D)
SP/LP (3D)
HEAD SW (4D)
To MAIN (PRE AMP) (1D)-(4D)
5V1 (14F)
GND (13F)
DROP OUT (12F)
fsc (10F)
MUTE (11F)
To MAIN (LUMA) (10F)-(14F)
Q218 2SB1462R(AR) BUF
Q219 2SB1462R(AR) AMP
Q265 2SC4617R (BR) AMP
Q257 UN9213 (8C) SW
Q001 2SC4617R(BR) AMP
Q223 2SC4617R(BR) AMP
IC211 NJM2234M CHROMA SELECT
IC212 CXL1203N SKEW COMPE.
IC202 CXA1208R CHROMA PROCESS
Q220 2SC4081R(BR) BUF
Q270 FMS1(S1) SW
Q221 UN9113(6C) SW
Q235 2SB1462R (AR) AMP
Q222 UN9213 (8C) SW
Q253 UN9113(6C) SW
Q254 UN9213 (8C) SW
Q255 UN9213 (8C) SW
Q256 UN9213 (8C) SW
D209 MA132K (M1)
TP213
TP223
TP222
REC CHROMA LEVEL RT215 2K-B
RT218 10K-B LOCK PHASE
RT217 10K-B fsc PHASE
CP208 4.4MHz BPF
CP210 1.6MHz TRAP
CP203 5.17MHz BPF
CP204 4.43MHz BPF
CP205 4.43MHz PEAK
X201 4.43MHz
L224 100µ
(1F) SW25Hz
(2F) CHROMA
(15F) PRE5V
(16F) ADD. H.
To MAIN (LUMA) (1F)-(9F) (15F), (16F)
(3F) C. SYNC
(4F) C. MUTE
(5F) PB5V
(6F) CHROMA
(9F) CHROMA
(8F) CORRECT
(7F) CORRECT
---+--- : REC CHROMA SIGNAL
---+++--- : PB CHROMA SIGNAL
E
D
C
B
A
1
2
3
4
5
6
7
8

MAIN (SYSTEM CONTROL SECTION) SCHEMATIC — FOR MONAURAL MODEL
HAUPT- (SYSTEMREGELUNGS-ABSCHNITT) SCHALTPLAN — FÜR MONO-MODELL
SCHÉMA DE PRINCIPE PRINCIPAL (SECTION DE COMMANDE DE SYSTÈME) — CAS DU MODÈLE MONAURAL


DC-DC CONVERTER BLOCK
SWR SWITCHING REGULATOR
FUNCTION SW BLOCK
ZOOM SW
POWER SAVE SW
IC901 CXP80116 SYSTEM CONTROL M µP
IC904 MM1028BF REG/BACK-UP DET
IC910 S-80521ALR(LF) RESET
IC912 LM2904M COMPA
IC908 LM2904M COMPA
IC916 7S32 GATE
IC915 7S08 GATE
IC909 MC147805.0(30) 5V REG
IC401 HT59503J AUDIO PROCESS
IC905 BR93C46F EAROM
Q917 2SB1462R(AR) 5V SW
Q902 2SB1168R (BCR) VCR 6V SW
Q901 2SC4617R (BR) VCR SW
Q920 UN9113(6C) PB5V SW
Q919 UN9213 (8C) PB SW
Q918 2SB1462R(AR) RESET
Q903 2SC4617R(BR) RESET
Q905 FMC2(C2) SW
Q914 UN9213 (8C) SW
Q909 UN9113 (6C) SW
Q916 UN9213 (8C) SW
Q915 UN9213 (8C) INV.
Q908 DTC144EE (26) INV.
TP901
TP902
To PROCESS (SUB SYS. CON) PG1205
To FUSE CN052
To PROCESS (SUB SYS. CON.) PG1202
To JACK PG003
To MAIN (CHROMA) (1H)-(3H)
To MAIN (SERVO) (1C)-(19C)
To MAIN (MOTOR) (DRIVE) (1B)-(8B)
To MAIN (LUMA) (1G)-(17G)
To MAIN (PRE AMP) (1K)-(9K)
To MAIN (TROUBLE) (SENSOR) (1J)-(18J)
To PROCESS (SENSOR DRIVE /PROCESS) CN1900
CN900
MAIN (SYSTEM CONTROL SECTION)P.C.B

SCHEMATIC	PAGE	SCHEMATIC	PAGE
CHROMA	5-39	PRE AMP	5-31
ENCODER (FOR PROGRAM AE MODEL)	5-11	SENSOR	5-7
ENCODER (FOR MODEL WITHOUT PROGRAM AE)	5-17	SENSOR DRIVE/PROCESS	5-9
ELECTRONIC VIEWFINDER(EVF)/INDI.	5-23	SERVO	5-29
FUSE	5-24	SYSTEM CONTROL (FOR STEREO MODEL)	5-25
JACK (FOR STEREO MODEL)	5-43	SYSTEM CONTROL (FOR MONAURAL MODEL)	5-41
JACK (FOR MONAURAL MODEL)	5-44	SUB SYSTEM CONTROL (FOR PROGRAM AE MODEL)	5-15
LUMA	5-33	SUB SYSTEM CONTROL (FOR MODEL WITHOUT PROGRAM AE)	5-19
MOTOR DRIVE	5-28	TROUBLE SENSOR	5-27

JACK SCHEMATIC — FOR STEREO MODEL
BUCHSEN-SCHALTPLAN — FÜR STEREO-MODELL
SCHÉMA DE PRINCIPE DE PRISES — CAS DU MODÈLE STÉRÉO



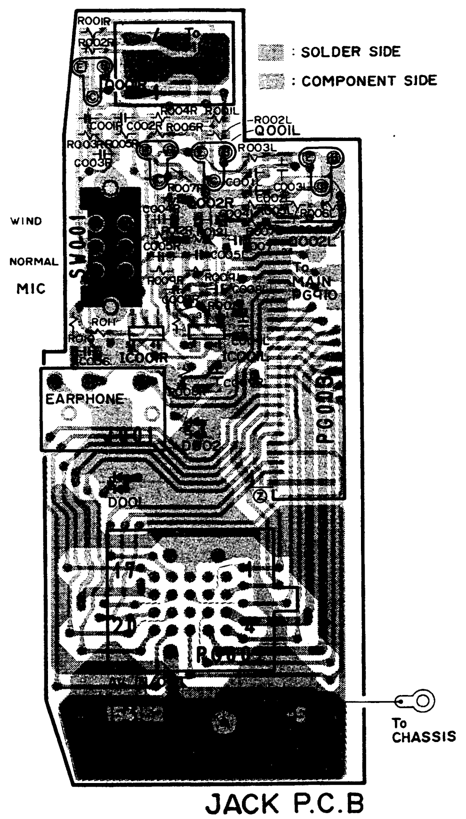
Q001R 2SC2412KR(BR) BUF
Q002R 2SC2412KR(BR) BUF
IC001R NJM2107F MIC AMP
Q001L 2SC2412KR(BR) BUF
Q002L 2SC2412KR(BR) BUF
IC001L NJM2107F MIC AMP
MIC
CN001 PG001
MIC (R)
GND
MIC (L)
SW001R WIND SW
SW001L WIND SW
NORMAL
WIND
R001R 560
R002R 3.9K
R003R 1M
R004R 15K
R005R 3.3K
R006R 27K
R007R 6.8K
R008R 10K
R004R 470K
R012R 56K
C001R 0.1
C002R 0.1
C003R 1
C004R 1
C005R 47P
C008R 1
C009R 1
R001L 560
R002L 3.9K
R003L 1M
R004L 15K
R005L 3.3K
R006L 27K
R007L 6.8K
R008L 10K
R009L 470K
R010 22K
R011 22K
R012L 56K
C001L 0.1
C002L 0.1
C003L 1
C004L 1
C005L 47P
C006 1
C007 0.1
C008L 1
C009L 1
J001
PG003
B+ (MIC)
MIC (L)
MIC (R)
GND
AUD(EAR)(R)
AUD(EAR)(L)
5V3b
SYNC EDIT
VIDEO (PB)
GND (VIDEO)
B+
VIDEO (REC)
REC RUN
GND (POWER)
AUDIO(REC)(R)
REMOTE
AUDIO(REC)(L)
GND (AUDIO)
AUDIO(PB)(R)
GND (POWER)
AUDIO(PB)(L)
AV CONT
GND(CHROMA)
To MAIN (SYS. CON.) PG910
PG002
5V
GND (VIDEO)
VIDEO (PB)
VIDEO (REC)
B+
GND (POWER)
SYNC EDIT
REC RUN
AV CONT
GND(CHROMA)
AUDIO(REC)(L)
AUDIO(REC)(R)
REMOTE
GND (AUDIO)
AUDIO(PB)(L)
AUDIO(PB)(R)
AV IN/OUT
D001 MA133 (MP)
D002 MA133 (MP)
(AUDIO GND)
(POWER GND)
(MIC GND)
(POWER GND)
AV IN/OUT (OUT SIDE)

JACK P.C.B

JACK CIRCUIT BOARD — FOR STEREO MODEL
BUCHSEN-LEITERPLATTE — FÜR STEREO-MODELL
CARTE DE CIRCUITS IMPRIMÉS DE PRISES — CAS DU MODÈLE STÉRÉO

▨ : SOLDER SIDE

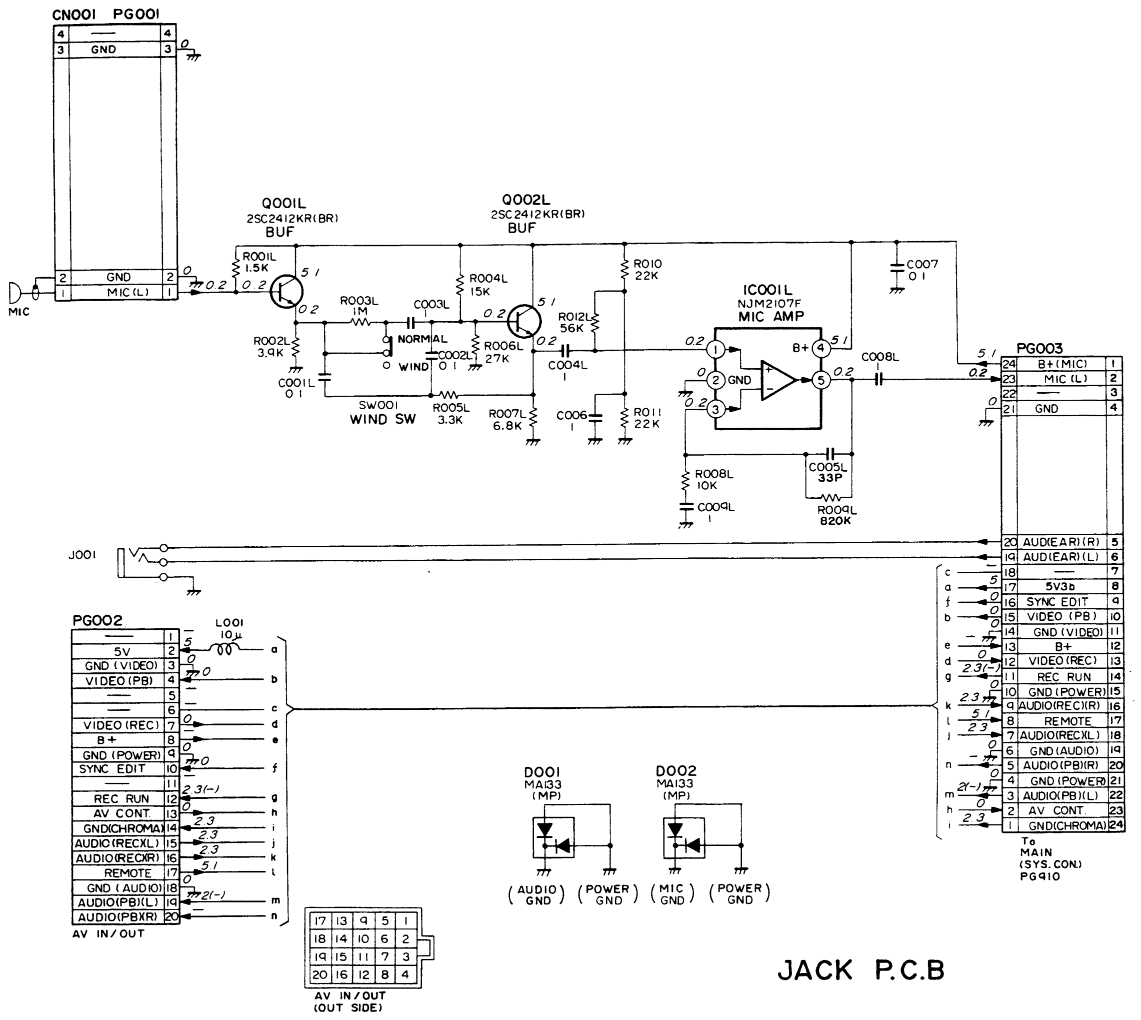
▨ : COMPONENT SIDE



WIND
NORMAL
MIC
SW001
EARPHONE
Q001L
Q002R
Q002L
IC001R
IC001L
D001
D002
J001
To MAIN PG910
PG003
154152
To CHASSIS

JACK P.C.B

JACK SCHEMATIC — FOR MONAURAL MODEL
BUCHSEN-SCHALTPLAN — FÜR MONO-MODELL
SCHÉMA DE PRINCIPE DE PRISES — CAS DU MODÈLE MONAURAL



CN001 PG001
GND
MIC (L)
MIC
Q001L 2SC2412KR(BR) BUF
Q002L 2SC2412KR(BR) BUF
IC001L NJM2107F MIC AMP
SW001 WIND SW
NORMAL
WIND
R001L 1.5K
R002L 3.9K
R003L 1M
R004L 15K
R005L 3.3K
R006L 27K
R007L 6.8K
R008L 10K
R009L 820K
R010 22K
R011 22K
R012L 56K
C001L 0.1
C002L 0.1
C003L 1
C004L 1
C005L 33P
C006 1
C007 0.1
C008L 1
C009L 1
L001 10μ
J001
PG003
B+ (MIC)
MIC (L)
GND
AUD(EAR)(R)
AUD(EAR)(L)
5V3b
SYNC EDIT
VIDEO (PB)
GND (VIDEO)
B+
VIDEO (REC)
REC RUN
GND (POWER)
AUDIO(REC)(R)
REMOTE
AUDIO(REC)(L)
GND (AUDIO)
AUDIO(PB)(R)
GND (POWER)
AUDIO(PB)(L)
AV CONT
GND(CHROMA)
To MAIN (SYS. CON.) PG910
PG002
5V
GND (VIDEO)
VIDEO (PB)
VIDEO (REC)
B+
GND (POWER)
SYNC EDIT
REC RUN
AV CONT
GND(CHROMA)
AUDIO(REC)(L)
AUDIO(REC)(R)
REMOTE
GND (AUDIO)
AUDIO(PB)(L)
AUDIO(PB)(R)
AV IN/OUT
D001 MA133 (MP)
D002 MA133 (MP)
(AUDIO GND)
(POWER GND)
(MIC GND)
(POWER GND)
AV IN/OUT (OUT SIDE)

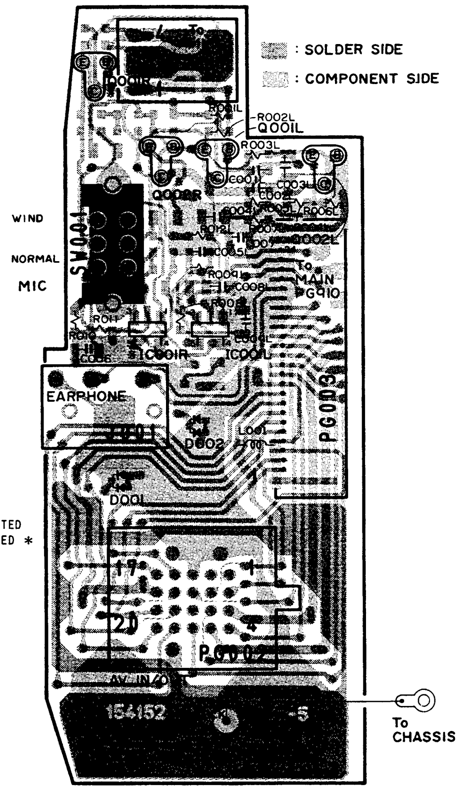
JACK P.C.B

JACK CIRCUIT BOARD — FOR MONAURAL MODEL
BUCHSEN-LEITERPLATTE — FÜR MONO-MODELL
CARTE DE CIRCUITS IMPRIMÉS DE PRISES — CAS DU MODÈLE MONAURAL

▨ : SOLDER SIDE

▨ : COMPONENT SIDE

NOTE : NO CIRCUIT IS CONNECTED TO COMPONENTS MARKED *

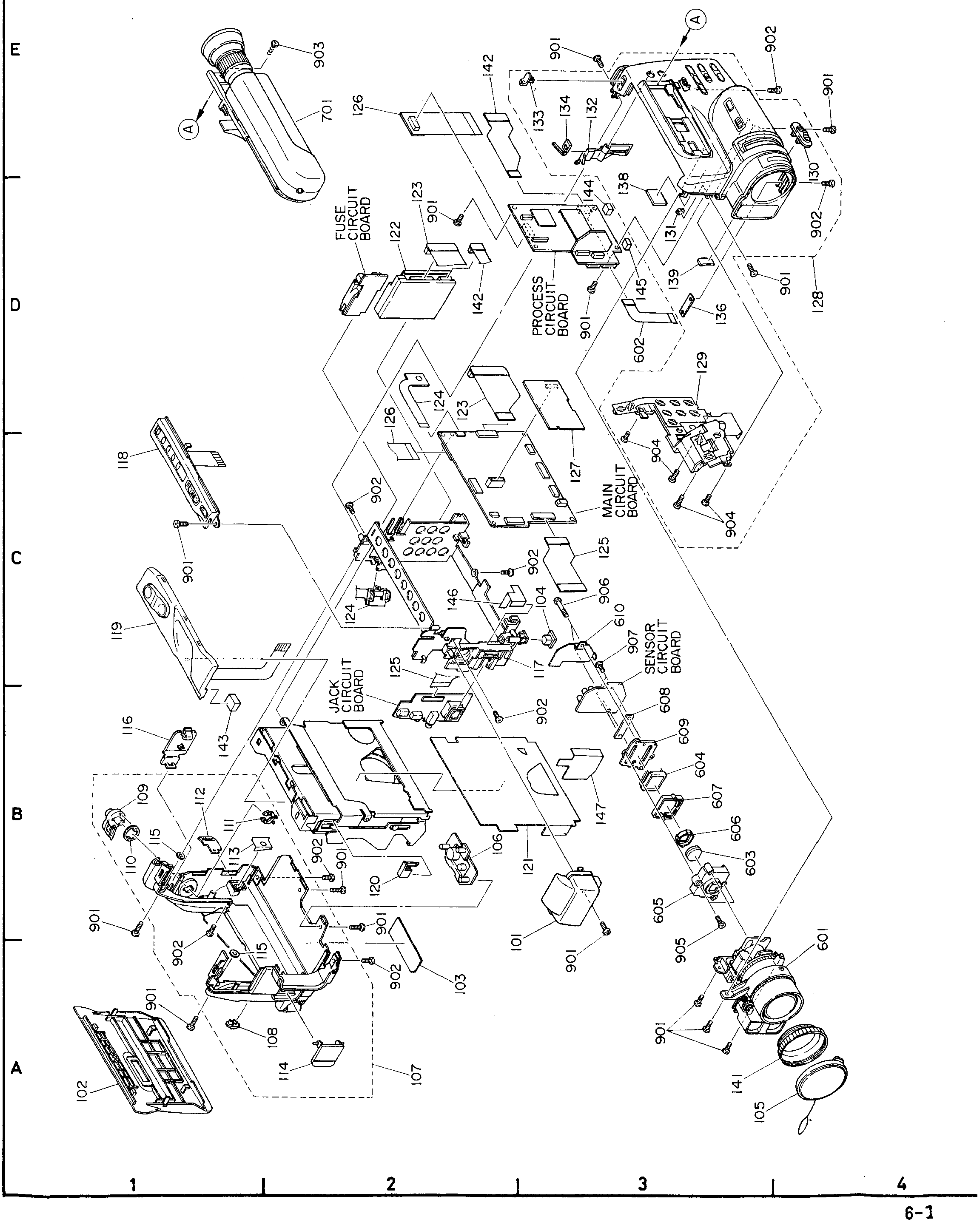


WIND
NORMAL
MIC
SW001
EARPHONE
Q001L
Q002L
IC001R
IC001L
D001
D002
J001
To MAIN PG910
PG003
PG002
AV IN
154152
To CHASSIS

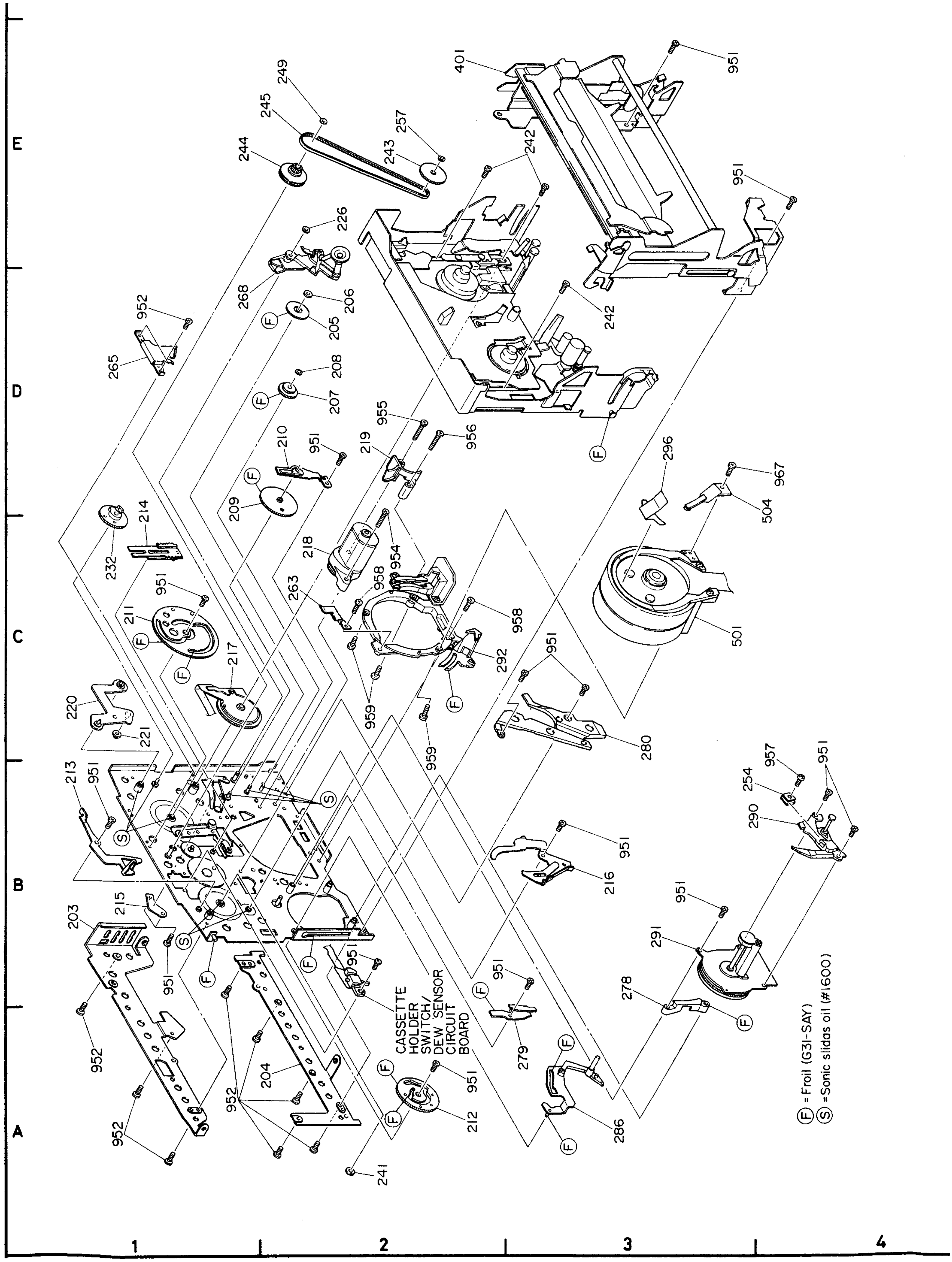
JACK P.C.B

CHAPTER 6 EXPLODED VIEWS
KAPITEL 6 EXPLOSIONSZEICHNUNGEN
CHAPITRE 6 VUES ÉCLATÉES

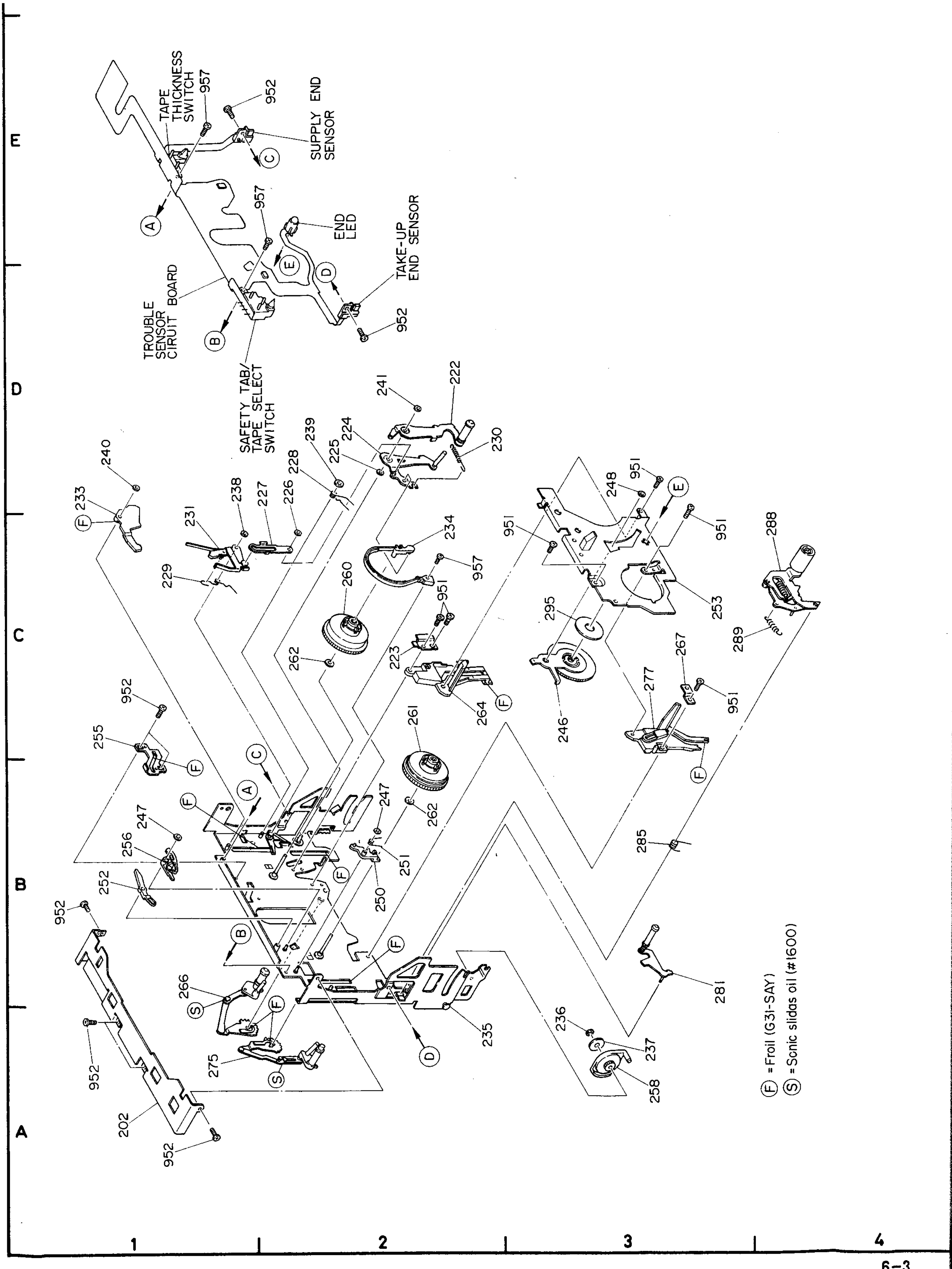
CABINET SECTION
GEHÄUSE-ABSCHNITT
SECTION COFFRET


E
D
C
B
A
1
2
3
4
A
701
903
126
142
901
133
134
132
902
901
130
902
138
144
131
139
901
128
136
145
602
FUSE CIRCUIT BOARD
122
123
901
142
PROCESS CIRCUIT BOARD
901
129
904
904
904
118
124
123
126
127
MAIN CIRCUIT BOARD
902
901
125
902
906
104
146
610
119
124
907
SENSOR CIRCUIT BOARD
117
125
JACK CIRCUIT BOARD
902
608
609
116
143
604
147
607
109
112
111
606
110
115
902
901
113
120
106
121
603
605
901
902
115
901
902
101
901
905
601
103
901
108
102
114
107
901
141
105

MAIN CHASSIS SECTION
HAUPTCHASSIS-ABSCHNITT
SECTION CHÂSSIS PRINCIPAL

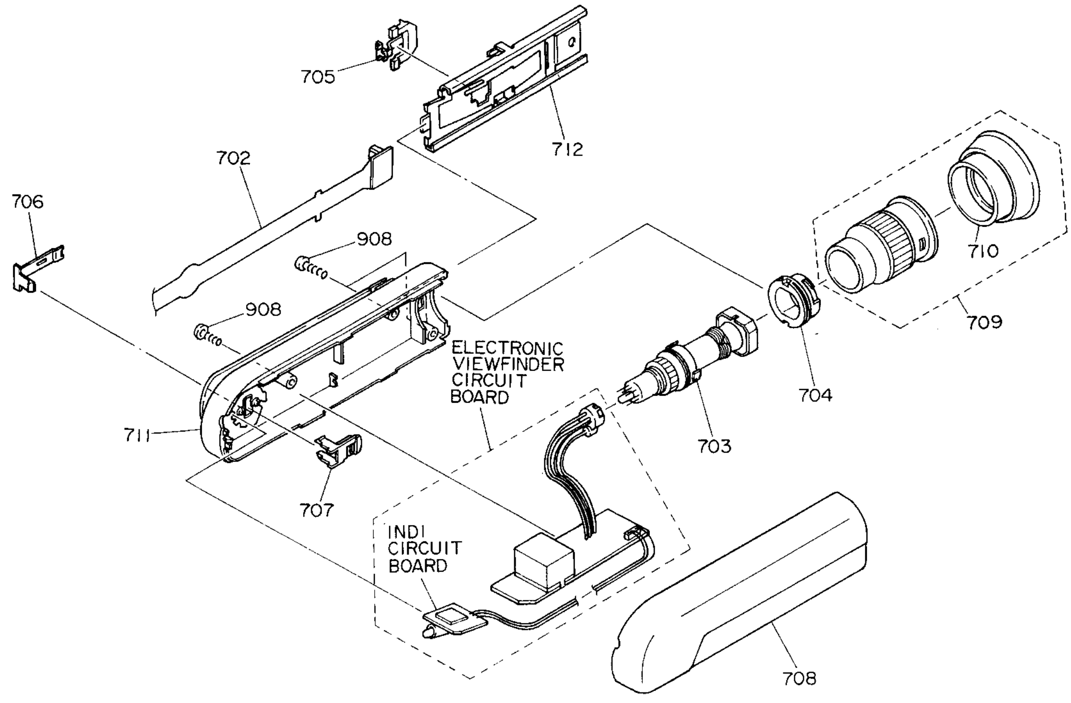

E
D
C
B
A
1
2
3
4
401
951
249
245
257
244
243
242
226
268
206
205
952
265
208
207
955
956
210
219
296
967
504
209
214
232
218
954
263
958
211
217
501
292
959
280
220
221
213
957
254
290
216
203
215
291
278
279
204
212
286
241
F
S
CASSETTE HOLDER SWITCH/ DEW SENSOR CIRCUIT BOARD
Ⓕ = Froil (G31-SAY)
Ⓢ = Sonic slidas oil (#1600)

SUB CHASSIS SECTION
SUBCHASSIS-ABSCHNITT
SECTION CHÂSSIS SECONDAIRE

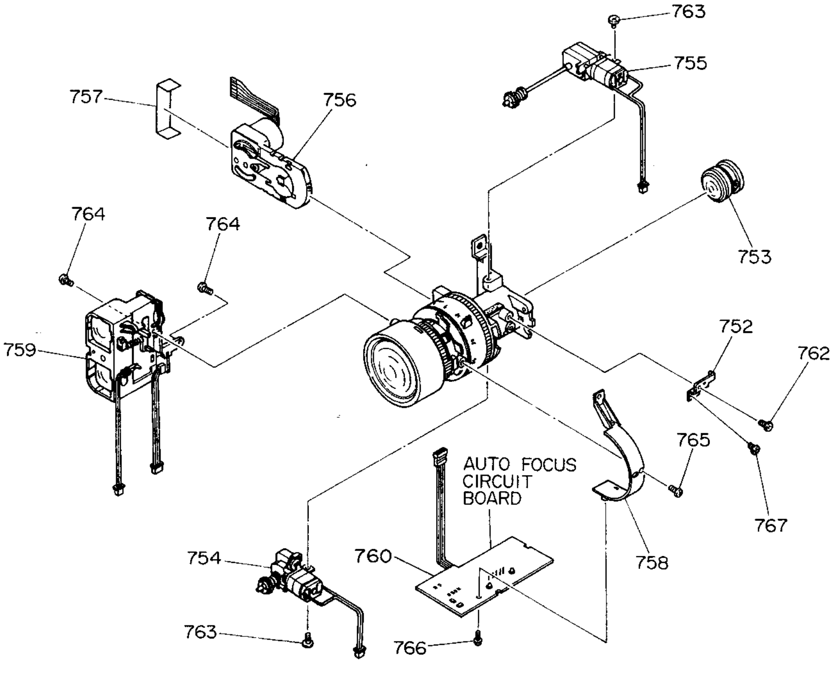


E
D
C
B
A
1
2
3
4
TAPE THICKNESS SWITCH
957
952
SUPPLY END SENSOR
C
A
957
END LED
E
D
TAKE-UP END SENSOR
952
TROUBLE SENSOR CIRUIT BOARD
B
SAFETY TAB/ TAPE SELECT SWITCH
241
222
239
224
225
230
228
240
233
F
238
231
227
226
229
234
957
260
951
262
223
264
248
951
951
951
253
295
246
267
277
951
288
289
952
255
261
247
262
256
252
251
250
285
952
266
235
236
237
258
281
275
202
952
952
F =Froil (G31-SAY)
S =Scnic slidas oil (#1600)

ELECTRONIC VIEWFINDER (EVF) SECTION
ELEKTRONISCHER SUCHER- (EVF) ABSCHNITT
SECTION VISEUR ÉLECTRONIQUE (EVF)


E
D
705
712
702
706
908
908
710
709
704
703
711
707
ELECTRONIC VIEWFINDER CIRCUIT BOARD
INDI CIRCUIT BOARD
708

LENS SECTION
OBJEKTIV-ABSCHNITT
SECTION OPTIQUE


C
B
A
763
755
757
756
764
764
753
752
762
759
765
767
AUTO FOCUS CIRCUIT BOARD
754
760
758
763
766
1
2
3
4

LUBRICATION
SCHMIERUNG
LUBRIFICATION

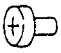
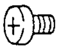
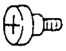
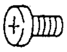
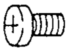
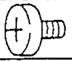
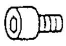
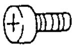
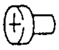
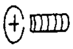
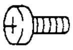
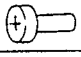
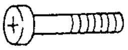
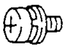
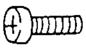
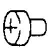
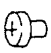
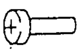
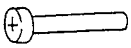
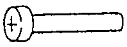
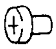
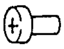
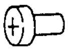
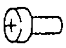
Lubrication points are shown in the exploded view diagrams by marks (Ⓢ, Ⓕ).

Lubricants shown in the diagram are as follows.

Ⓢ Sonic slider oil (#1600)

Ⓕ Froil (G31-SAY)

SCREWS USED
VERWENDETE SCHRAUBEN
VIS DE FIXATION UTILISÉES

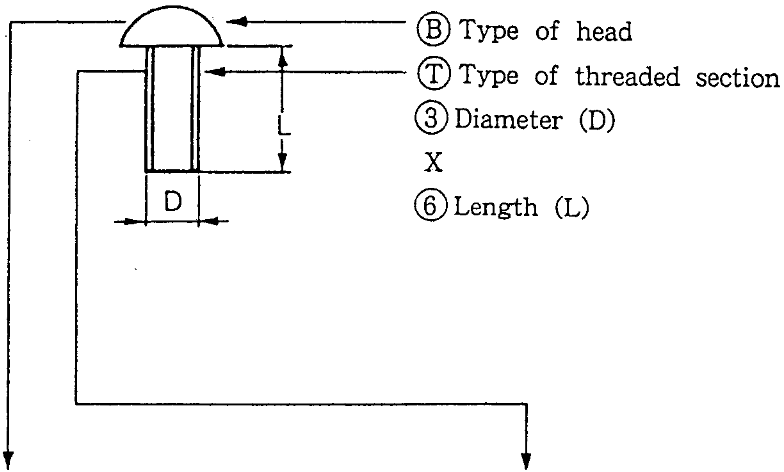
SYMBOL No.	CONFIGURATION (COLOUR)	DIMENSION (mm)
242	 (BLACK)	P 2×1.4
762	 (BLACK)	PT 3×1.6
763	 (SILVER)	SPECIAL
764	 (BLACK)	PT 4×1.6
765	 (BLACK)	PT 4×1.6
766	 (BLACK)	SPECIAL
767	 (BLACK)	SPECIAL
901	 (BLACK)	BT 2×6
902	 (BLACK)	B 2×3
903	 (BLACK)	FT 2×6
904	 (SILVER)	BT 2×6
905	 (BLACK)	B 2×7
906	 (SILVER)	BT 2×14
907		SPECIAL
908	 (BLACK)	BT 1.7×5
951	 (SILVER)	P 1.4×2
952	 (BLACK)	P 1.4×1.6
954	 (SILVER)	P 1.4×6
955		P 1.4×12
956		P 1.7×12
957		P 1.4×2.5
958	 (SILVER)	P 2×3
959	 (SILVER)	P 2×4
967	 (BLACK)	P 2×4

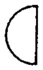
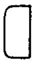
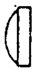
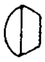
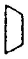
WASHERS USED
VERWENDETE SCHEIBEN
RONDELLES UTILISÉES

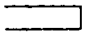
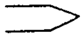
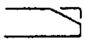
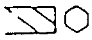
SYMBOL No.	CONFIGURATION	DIMENSION (mm)
206		O.D. : 3.0 I.D. : 1.2 t : 0.25
208		O.D. : 3.6 I.D. : 1.2 t : 0.25
225		O.D. : 3.2 I.D. : 1.35 t : 0.13
226		O.D. : 3.2 I.D. : 1.2 t : 0.25
238		O.D. : 3.6 I.D. : 1.2 t : 0.13
240		O.D. : 4.0 I.D. : 1.7 t : 0.25
241		O.D. : 2.5 I.D. : 0.8 t : 0.13
247		O.D. : 3.6 I.D. : 1.0 t : 0.25
248		O.D. : 1.8 I.D. : 0.8 t : 0.13
249		O.D. : 2.5 I.D. : 1.0 t : 0.25
257		O.D. : 2.5 I.D. : 0.8 t : 0.25
262		O.D. : 5.0 I.D. : 2.35 t : 0.25
293		O.D. : 3.6 I.D. : 1.4 t : 0.25

SCREW CLASSIFICATION
SCHRAUBEN-KLASSIFIKATION
CLASSIFICATION DES VIS

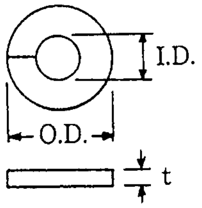
Example : BT3 × 6


Ⓑ Type of head
Ⓣ Type of threaded section
③ Diameter (D)
X
⑥ Length (L)
L
D

Abbreviation	Name	Shape
No symbol	Brazier head	
P	Pan head	
B	Binding head	
O	Oval countersunk head	
F	Flat countersunk head	

Abbreviation	Name	Shape
No symbol	Machine (clamps without tapping)	
t	Tapping (clamps with tapping) Type 1	
T	Tapping (clamps with tapping) Type 2	
f	Forming tight (for metal)	
Note Since the forming tight screw tightens while self tapping machine screws can be replaced by tapping screws.		

WASHER CLASSIFICATION
SCHEIBEN-KLASSIFIKATION
CLASSIFICATION DES RONDELLES



CHAPTER 7 REPLACEMENT PARTS LEST

SYMBOL-NO	P-NO	DISCRIPTION
MECHANISM SECTION		
101	5422447	MICROPHONE
102	4730026	DOOR
103	4682651	LABEL
104	6594051	CAP
105	6443911	CAP
106	6443064	HOLDER, TRIPOD
107	4712241	CASE(R)
108	4750311	KNOB
109	4750517	KNOB
110	6528752	SPRING
111	6810791	HOLDER, KNOB
112	7797031	BRACKET
113	4341251	SPACER
114	6487511	CAP, CONNECTOR
115	7675881	CUSHION
116	6487482	COVER, BATTERY
117	6185415	FRAME
118	5617205	CONT UNIT
119	5617211	T/W UNIT
120	6810901	HOLDER, FLEXIBLE
121	4341444	SPACER
122	4132365	DC-DC CONVERTER
123	4132203	CONNECTOR, DCS FLEXIBLE
124	5617151	TRIG UNIT
125	1590411	CONNECTOR, IDS FLEXIBLE
126	4132193	CONNECTOR, CV FLEXIBLE
127	1379069	PWB ASSY HTS9502H
128	4711873	CASE(L)
129	5617221	PROGRAM SWITCH UNIT
130	4750623	KNOB, AF
131	7675881	CUSHION
132	6407862	LEVER
133	4750291	KNOB, EJECT
134	6810801	HOLDER, LOCK
136	7418791	NUT
138	7675781	CUSHION
139	7675782	CUSHION
141	6443072	HOOD, LENS
142	4132211	CONNECTOR, DCC FLEXIBLE
143	7675922	CUSHION
144	6563622	CUSHION
145	6563623	CUSHION
146	6529151	SPRING
147	4342371	SPACER
202	7473854	HOLDER
203	7473791	BRACKET
204	7473803	BRACKET
205	6347851	GEAR
206	7786213	WASHER
207	6347862	GEAR
208	7784687	WASHER
209	6916383	GEAR
210	7472721	HOLDER, GEAR
211	6347873	GEAR
212	6347881	GEAR
213	7471994	ARM
214	7472024	RACK
215	7474792	PLATE
216	7472007	ARM
217	5610861	SWITCH, MODE
218	5579301	MOTOR, LOADING
219	6822651	GUIDE
220	7471973	SLIDER
221	4522771	ROLLER
222	7472608	ARM
223	7472734	STOPPER, BAND
224	7472513	ARM
225	4340244	WASHER
226	7787571	WASHER
227	7472894	ARM
228	6552663	SPRING
229	6556433	SPRING
230	6556444	SPRING
231	7472687	ARM
232	6440371	CAM, BRAKE
233	6821273	BRAKE
234	7472711	BAND, TENTION
235	7139023	CHASSIS, SUB
236	7774942	E RING
237	6526581	SPRING
238	4340248	WASHER
239	7787575	POLYSLIDER WASHER
240	4340249	WASHER
241	4340245	WASHER
242	4523783	SCREW
243	6440362	GEAR
244	6440341	GEAR
245	6359041	BELT
246	7795524	IDLER
247	4340243	WASHER
248	4340242	WASHER
249	7787573	WASHER
250	6821183	ARM
251	6552652	SPRING
252	6821263	ARM
253	7474817	BRACKET
254	7474971	BRACKET
255	4580081	STOPPER
256	6821233	ARM
257	4340241	WASHER
258	6821285	DUMPER
260	6416321	REEL, SUPPLY
261	6416323	REEL, TAKE-UP
262	7786621	POLYSLIDER WASHER
263	6528983	PLATE
264	6821333	RAIL, GUIDE
265	7473363	HOLDER, ARM
266	6916691	BASE, GUIDE ROLLER(I)
267	4580121	SPACER
268	6916621	ARM
275	6916701	BASE, GUIDE ROLLER(O)
277	6821076	PLATE, GUIDE
278	6821093	RAIL
279	6821104	RAIL
280	6821111	COVER, BELT
281	7472216	ARM
285	6552625	SPRING
286	7472241	ARM
288	7472975	PRESSER ROLLER
289	6556731	SPRING
290	6821085	BASE OPERATION
291	5571861	MOTOR, CAPSTAN
292	6916641	BASE, CYLINDER
295	4342072	SEET
296	4341771	BRACKET
401	7472464	CASSETTE HOLDER ASSY
501	5436476	CYLINDER ASSY (CY-53LA-F)
504	5793831	BRUSH

SYMBOL-NO	P-NO	DISCRIPTION
601	6960543	LENS, ZOOM
602	1590372	CONNECTOR, AF FLEXIBLE
603	5783191	FILTER
604	5318291	CCD IMAGE DEVICE ICX027BX
605	6810541	CAP
606	6594061	RUBBER
607	6810172	HOLDER, SENSOR
608	4341631	SPACER
609	4893941	PLATE, SENSOR
610	7478481	PLATE
701	7057031	EVF ASSY
702	4132275	CONNECTOR, FLEXIBLEE
703	5319041	CRT
704	6810931	HOLDER, NECK
705	6811472	HOLDER, FLEXIBLE
706	6810871	HOLDER
707	6811351	HOLDER
708	4711906	CASE, FRONT
709	4711156	LENS, EVF
710	6443301	CAP, EYE
711	4711163	CASE, BOTTOM
712	7797144	SHOE
752	6960522	PLATE
753	6960523	LENS, REAR
754	6960882	MOTOR, ZOOM
755	6960883	MOTOR, AUTO FOCUS
756	6960942	IRIS
757	6960885	TAPE, IRIS
758	6960886	COVER
759	6960887	AUTO FOCUS BLOCK
760	1620911	PWB ASSY AUTO FOCUS
762	6960531	SCREW
763	6960891	SCREW
764	6960533	SCREW
765	6960534	SCREW
766	6960892	SCREW(1.7X3.5)
767	6960893	SCREW
901	7775946	SCREW(2X6)
902	7775963	SCREW(2X3)
903	8639106	SCREW
904	7775956	SCREW(2X6)
905	7775967	SCREW(2X7)
906	8612114	SCREW(2X14)
907	7775882	SCREW(2X4)
908	8619003	SCREW 1.7X5
951	7775921	SCREW(1.4X2)
952	7775912	SCREW(1.4X1.8)
954	8712974	SCREW(1.4X6)
955	7773531	SCREW
956	7773541	SCREW
957	7775922	SCREW(1.4X2.5)
958	8700268	SCREW(1.7X3)
959	8711104	SCREW 2X4
967	7783153	SCREW(2X4)

VTR SECTION

C 003	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 001L	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 001R	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 002L	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 002R	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 003L	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 003R	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 004L	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 004R	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 005L	0202049	CERAMIC CHIP 47PF+-5% 50V

SYMBOL-NO	P-NO	DISCRIPTION
C 005R	0202049	CERAMIC CHIP 47PF+-5% 50V
C 006	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 007	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 008L	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 008R	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 009L	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 009R	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 103	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 104	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 201	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 202	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 203	0202043	CERAMIC DISC 15PF+-5% 50V
C 204	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 205	0202043	CERAMIC DISC 15PF+-5% 50V
C 207	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 208	0202053	CERAMIC DISC 82PF+-5% 50V
C 210	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 211	0202049	CERAMIC DISC 47PF+-5% 50V
C 212	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 213	0202042	CERAMIC CHIP 12PF+-5% 50V
C 214	0202043	CERAMIC DISC 15PF+-5% 50V
C 216	0202105	CERAMIC CHIP 470PF+-10% 50V
C 218	0202048	CERAMIC DISC 39PF+-5% 50V
C 219	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 220	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 223	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 224	0202106	CERAMIC CHIP 560PF+-10% 50V
C 225	0202096	CERAMIC CHIP 0.047UF+80-20% 16V
C 234	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 237	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 241	0202105	CERAMIC CHIP 470PF+-10% 50V
C 243	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 246	0202101	CERAMIC CHIP 220PF+-10% 50V
C 247	0202057	CERAMIC CHIP 180PF+-5% 50V
C 248	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 250	0202166	CERAMIC CHIP 820PF+-5% 50V
C 251	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 254	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 256	0202054	CERAMIC CHIP 100PF+-5% 50V
C 257	0202089	CERAMIC CHIP 33PF+-5% 50V
C 259	0202092	CERAMIC CHIP 47PF+-5% 50V
C 264	0202053	CERAMIC DISC 82PF+-5% 50V
C 265	0202054	CERAMIC CHIP 100PF+-5% 50V
C 268	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 269	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 271	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 274	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 276	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 278	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 279	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 280	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 281	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 282	0202049	CERAMIC DISC 47PF+-5% 50V
C 285	0202116	CERAMIC CHIP 3300PF+-10% 50V
C 286	0202059	CERAMIC CHIP 270PF+-5% 50V
C 287	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 288	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 289	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 290	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 291	0202052	CERAMIC DISC 68PF+-5% 50V
C 292	0202055	CERAMIC CHIP 120PF+-5% 50V
C 293	0202051	CERAMIC CHIP 56PF+-5% 50V
C 294	0202061	CERAMIC CHIP 330PF+-5% 50V
C 298	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 299	0202054	CERAMIC CHIP 100PF+-5% 50V

SYMBOL-NO	P-NO	DISCRIPTION
C 301	0202045	CERAMIC DISC 22PF+-5% 50V
C 302	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 303	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 304	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 305	0209944	CERAMIC CHIP 150PF+-5% 50V
C 306	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 307	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 310	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 315	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 316	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 318	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 319	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 321	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 322	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 323	0202055	CERAMIC CHIP 120PF+-5% 50V
C 324	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 326	0202104	CERAMIC CHIP 390PF+-10% 50V
C 328	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 330	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 331	0202105	CERAMIC CHIP 470PF+-10% 50V
C 333	0202096	CERAMIC CHIP 0.047UF+80-20% 16V
C 336	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 338	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 339	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 340	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 341	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 344	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 345	0202048	CERAMIC DISC 39PF+-5% 50V
C 346	0202089	CERAMIC CHIP 33PF+-5% 50V
C 347	0202049	CERAMIC DISC 47PF+-5% 50V
C 348	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 351	0202158	CERAMIC CHIP 75PF+-5% 50V
C 352	0202082	CERAMIC CHIP 9PF+-5% 50V
C 353	0202115	CERAMIC CHIP 2700PF+-10% 50V
C 354	0202059	CERAMIC CHIP 270PF+-5% 50V
C 355	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 356	0202049	CERAMIC DISC 47PF+-5% 50V
C 357	0202045	CERAMIC DISC 22PF+-5% 50V
C 358	0202054	CERAMIC CHIP 100PF+-5% 50V
C 359	0202044	CERAMIC CHIP 18PF+-5% 50V
C 360	0202048	CERAMIC DISC 39PF+-5% 50V
C 362	0202041	CERAMIC CHIP 10PF+-5% 50V
C 363	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 364	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 365	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 367	0202051	CERAMIC CHIP 56PF+-5% 50V
C 368	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 370	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 372	0202146	CERAMIC CHIP 0.1UF+80-20% 16V
C 374	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 375	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 378	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 380	0202059	CERAMIC CHIP 270PF+-5% 50V
C 381	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 382	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 383	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 384	0202053	CERAMIC DISC 82PF+-5% 50V
C 385	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C 386	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 387	0202054	CERAMIC CHIP 100PF+-5% 50V
C 388	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 389	0202104	CERAMIC CHIP 390PF+-10% 50V
C 391	0202105	CERAMIC CHIP 470PF+-10% 50V
C 396	0202053	CERAMIC DISC 82PF+-5% 50V
C 398	0202129	CERAMIC CHIP 0.022UF+80-20% 25V

SYMBOL-NO	P-NO	DISCRIPTION
C 601	0201107	CERAMIC CHIP 0.047UF+-10% 25V
C 602	0202157	CERAMIC CHIP 680PF+-2% 50V
C 604	0202156	CERAMIC CHIP 22PF+-2% 50V
C 605	0202023	CERAMIC CHIP 1000PF+-2% 50V
C 606	0202022	CERAMIC CHIP 56PF+-2% 50V
C 607	0202015	CERAMIC CHIP 390PF+-2% 50V
C 608	0202058	CERAMIC CHIP 220PF+-5% 50V
C 609	0202118	CERAMIC CHIP 4700PF+-10% 25V
C 610	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 611	0202116	CERAMIC CHIP 3300PF+-10% 50V
C 612	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 614	0201107	CERAMIC CHIP 0.047UF+-10% 25V
C 615	0202127	CERAMIC CHIP 0.047UF+80-20% 50V
C 616	0201107	CERAMIC CHIP 0.047UF+-10% 25V
C 617	0201065	CERAMIC CHIP 0.022UF+-10% 25V
C 618	0201065	CERAMIC CHIP 0.022UF+-10% 25V
C 619	0201065	CERAMIC CHIP 0.022UF+-10% 25V
C 620	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 621	0202109	CERAMIC CHIP 1000PF+-10% 50V
C 622	0209969	CERAMIC CHIP 0.1UF+80-20% 25V
C 624	0202089	CERAMIC CHIP 33PF+-5% 50V
C 625	0202089	CERAMIC CHIP 33PF+-5% 50V
C 626	0201007	CERAMIC CHIP 0.01UF+-20% 50V
C 629	0209964	CERAMIC CHIP 0.33UF+80-20% 16V
C 631	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 632	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 634	0209964	CERAMIC CHIP 0.33UF+80-20% 16V
C 636	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 637	0201039	CERAMIC CHIP 470PF+-5% 50V
C 638	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 639	0201008	CERAMIC CHIP 0.015UF+-20% 50V
C 640	0202114	CERAMIC CHIP 2200PF+-10% 50V
C 643	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 644	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 645	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 646	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 647	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 648	0202114	CERAMIC CHIP 2200PF+-10% 50V
C 649	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 650	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 651	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 652	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 653	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 654	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 655	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 656	0202089	CERAMIC CHIP 33PF+-5% 50V
C 662	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 663	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 902	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 904	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 905	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 906	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 907	0202118	CERAMIC CHIP 4700PF+-10% 25V
C 908	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 909	0202084	CERAMIC CHIP 12PF+-5% 50V
C 910	0202084	CERAMIC CHIP 12PF+-5% 50V
C 911	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 912	0201062	CERAMIC CHIP 0.0068UF+-10% 50V
C 913	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 914	0201054	CERAMIC CHIP 1000PF+-10% 50V
C 915	0201062	CERAMIC CHIP 0.0068UF+-10% 50V
C 916	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 917	0201054	CERAMIC CHIP 1000PF+-10% 50V
C 918	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 919	0202141	CERAMIC CHIP 0.1UF+-10% 25V

SYMBOL-NO	P-NO	DISCRIPTION
C 920	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 921	0202118	CERAMIC CHIP 4700PF+-10% 25V
C 923	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 924	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 929	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 934	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 935	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C 940	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 941	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 945	0202146	CERAMIC CHIP 1UF+80-20% 16V
C 946	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 947	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C 949	0201107	CERAMIC CHIP 0.047UF+-10% 25V
C 950	0209964	CERAMIC CHIP 0.33UF+80-20% 16V
C 951	0209964	CERAMIC CHIP 0.33UF+80-20% 16V
C 953	0202041	CERAMIC CHIP 10PF+-5% 50V
C 954	0202042	CERAMIC CHIP 12PF+-5% 50V
C 955	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 956	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 957	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 958	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 959	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 960	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C 961	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
R 001L	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 001R	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 002L	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 002R	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 003L	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R 003R	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R 004L	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 004R	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 005L	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 005R	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 006L	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 006R	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 007L	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 007R	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 008L	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 008R	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 009L	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 009R	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 010	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 011	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 012L	0104059	CHIP RESISTOR 56KOHM+-5% 1/16W
R 012R	0104059	CHIP RESISTOR 56KOHM+-5% 1/16W
R 051	0103843	CHIP RESISTOR 1KOHM+-5% 1/16W
R 101	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 102	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 103	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 104	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 105	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 106	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 107	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 108	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 109	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 110	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R 111	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R 112	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 113	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 115	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 116	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 117	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 118	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 123	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 124	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 125	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 126	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 127	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 128	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 133	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 135	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 136	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 138	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R 144	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 146	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 147	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 148	0104068	CHIP RESISTOR 270KOHM+-5% 1/16W
R 149	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R 150	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R 151	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 152	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 156	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 158	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 159	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 160	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 161	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 162	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 163	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 164	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 201	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 202	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R 203	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R 204	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R 205	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 206	0104027	CARBON FILM 180 OHM+-5% 1/16W
R 207	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 208	0104054	CHIP RESISTOR 18KOHM+-5% 1/16W
R 209	0104054	CHIP RESISTOR 18KOHM+-5% 1/16W
R 210	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 211	0104032	CHIP RESISTOR 390 OHM+-5% 1/16W
R 212	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 213	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 214	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 215	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 216	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R 217	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R 219	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 220	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 221	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R 222	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 223	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 224	0104032	CHIP RESISTOR 390 OHM+-5% 1/16W
R 225	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 226	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 227	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 228	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R 229	0104073	CHIP RESISTOR 560KOHM+-5% 1/16W
R 230	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 231	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 232	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R 233	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 234	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 235	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W
R 236	0104029	CHIP RESISTOR 270 OHM+-5% 1/16W
R 237	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 239	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 241	0104298	CHIP RESISTOR 100KOHM+-0.5% 1/16W
R 243	0104554	CHIP RESISTOR 1KOHM+-1% 1/16W
R 244	0104554	CHIP RESISTOR 1KOHM+-1% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 245	0104554	CHIP RESISTOR 1KOHM+-1% 1/16W
R 246	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 247	0103826	CHIP RESISTOR 39 OHM+-5% 0.1W
R 248	0103826	CHIP RESISTOR 39 OHM+-5% 0.1W
R 249	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 250	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 253	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 254	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 255	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 256	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 257	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 258	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 259	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 260	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 261	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 262	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 263	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 264	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 265	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 266	0104029	CHIP RESISTOR 270 OHM+-5% 1/16W
R 267	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 268	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 269	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 270	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 271	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 272	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 273	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 274	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 276	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 277	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 278	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 280	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 281	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 282	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 283	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 284	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 285	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 286	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 287	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R 288	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 289	0104062	CHIP RESISTOR 82KOHM+-5% 1/16W
R 290	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 291	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 292	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 293	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 294	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 295	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 297	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 299	0104298	CHIP RESISTOR 100KOHM+-0.5% 1/16W
R 300	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 301	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 302	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 303	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 304	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 305	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 307	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 308	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R 309	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 310	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 311	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 313	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 314	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R 315	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 316	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 317	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 319	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 320	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 321	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 322	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 323	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 324	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 325	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R 326	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 327	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 328	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R 329	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 330	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 331	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R 332	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 333	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 334	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 335	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R 336	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 337	0103825	CHIP RESISTOR 33OHM+-5% 0.1W
R 338	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 339	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 343	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 344	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 347	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 348	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R 349	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R 350	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 351	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 352	0103817	CHIP RESISTOR 6.8OHM+-10% 0.1W
R 354	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 355	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 356	0104029	CHIP RESISTOR 270 OHM+-5% 1/16W
R 357	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 358	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 359	0104027	CARBON FILM 180 OHM+-5% 1/16W
R 360	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 362	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 363	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 364	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 365	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 366	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 367	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 368	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 369	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 370	0104018	METAL FILM 39 OHM+-5% 1/16W
R 371	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 372	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 373	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 374	0104025	CHIP RESISTOR 120 OHM+-5% 1/16W
R 376	0104554	CHIP RESISTOR 1KOHM+-1% 1/16W
R 377	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 378	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 379	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 380	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 381	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 382	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 383	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 384	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 385	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 386	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 387	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 388	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 389	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 391	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 394	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 395	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 396	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 397	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R 398	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 601	0104277	CHIP RESISTOR 5.1KOHM+-1% 1/10W
R 602	0104277	CHIP RESISTOR 5.1KOHM+-1% 1/10W
R 604	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 605	0104276	CHIP RESISTOR 5.6KOHM+-1% 1/10W
R 606	0104277	CHIP RESISTOR 5.1KOHM+-1% 1/10W
R 607	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 608	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R 609	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R 610	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 611	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R 612	0104029	CHIP RESISTOR 270 OHM+-5% 1/16W
R 613	0104027	CARBON FILM 180 OHM+-5% 1/16W
R 614	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 615	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 616	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 617	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 618	0104074	CHIP RESISTOR 680KOHM+-5% 1/16W
R 619	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 620	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 621	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 622	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 623	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 624	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 625	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 626	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R 627	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 628	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 629	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 630	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 631	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 632	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 633	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 634	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R 635	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 636	0104069	CHIP RESISTOR 330KOHM+-5% 1/16W
R 638	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 639	0104069	CHIP RESISTOR 330KOHM+-5% 1/16W
R 640	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 642	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 643	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 644	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 645	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R 646	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 647	0104062	CHIP RESISTOR 82KOHM+-5% 1/16W
R 648	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R 649	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 650	0104022	CHIP RESISTOR 68 OHM+-5% 1/16W
R 651	0104026	CHIP RESISTOR 150 OHM+-5% 1/16W
R 652	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R 653	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 655	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R 656	0104115	CHIP RESISTOR 3.9KOHM 1/10W
R 657	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 658	0104085	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R 659	0104085	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R 660	0104085	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R 661	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 662	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 663	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 664	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R 665	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 667	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 668	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R 669	0104085	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R 670	0104085	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R 671	0104085	CHIP RESISTOR 2.2 OHM+-5% 1/16W
R 672	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 673	0104054	CHIP RESISTOR 18KOHM+-5% 1/16W
R 674	0104062	CHIP RESISTOR 82KOHM+-5% 1/16W
R 675	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R 676	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R 680	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 681	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 682	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 689	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 691	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 693	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 694	0104027	CARBON FILM 180 OHM+-5% 1/16W
R 701	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 702	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 703	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 704	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 705	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 706	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 708	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 709	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 710	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R 711	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R 713	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 714	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 715	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R 716	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 717	0104027	CARBON FILM 180 OHM+-5% 1/16W
R 718	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R 719	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R 720	0104027	CARBON FILM 180 OHM+-5% 1/16W
R 721	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R 722	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 723	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 724	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 725	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 726	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 727	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 728	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 732	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 735	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 736	0104065	CHIP RESISTOR 150KOHM+-5% 1/16W
R 738	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R 739	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 741	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 742	0104067	CHIP RESISTOR 220KOHM+-5% 1/16W
R 745	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 748	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R 749	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 750	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 751	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 752	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 753	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 754	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 755	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 756	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 757	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 758	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 761	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 762	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 763	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 764	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 765	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 770	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 771	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 772	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 901	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 902	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 903	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 904	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R 905	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R 906	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R 907	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R 908	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 909	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 910	0104267	CHIP RESISTOR 75 OHM+-1% 1/10W
R 911	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 912	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 913	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 914	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 915	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 916	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 919	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 920	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R 921	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 922	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 923	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 927	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 928	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 929	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 930	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 931	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 932	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 933	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 934	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 935	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 936	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 938	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 940	0104585	CHIP RESISTOR 100KOHM+-5% 1/32W
R 941	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 943	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 945	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 946	0104111	METAL FILM 10KOHM+-10% 1/10W
R 947	0104116	METAL FILM 39KOHM+-10% 1/10W
R 948	0104116	CHIP RESISTOR 39KOHM 1/10W
R 949	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 950	0104062	CHIP RESISTOR 82KOHM+-5% 1/16W
R 951	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R 952	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 953	0104062	CHIP RESISTOR 82KOHM+-5% 1/16W
R 954	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R 955	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 956	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R 957	0104064	CHIP RESISTOR 120KOHM+-5% 1/16W
R 958	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 959	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R 960	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 961	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R 962	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 963	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 964	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R 965	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 966	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W
R 967	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 968	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 969	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R 970	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 971	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R 972	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W
R 973	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R 974	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 975	0104112	CHIP RESISTOR 47KOHM+-1% 0.1W
R 976	0104121	METAL FILM 27KOHM+-1% 1/10W
R 977	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R 978	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R 979	0104112	CHIP RESISTOR 47KOHM+-1% 0.1W
R 980	0104121	METAL FILM 27KOHM+-1% 1/10W
R 981	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 982	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R 985	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 986	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 988	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 989	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R 990	0104067	CHIP RESISTOR 220KOHM+-5% 1/16W
R 991	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R 992	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R 996	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 997	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R 998	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R 999	0104585	CHIP RESISTOR 100KOHM+-5% 1/32W
RT 120	0104175	CHIP RESISTOR 22KOHM+-10% 1/8W
RT 121	5040088	SEMI VARIABLE 50KOHM
RT 122	0104139	METAL FILM 47 OHM+-10% 1/8W
RT 123	5040082	SEMI VARIABLE 500 OHM
RT 124	0104173	CHIP RESISTOR 15KOHM+-10% 1/8W
RT 125	5040088	SEMI VARIABLE 50KOHM
RT 127	5040087	SEMI VARIABLE 20KOHM
RT 128	5040085	SEMI VARIABLE 5KOHM
RT 129	5040085	SEMI VARIABLE 5KOHM
RT 130	5040086	SEMI VARIABLE 10KOHM
RT 131	0104157	CHIP RESISTOR 1KOHM+-10% 1/8W
RT 132	0104158	CHIP RESISTOR 1.2KOHM+-10% 1/8W
RT 133	5040084	SEMI VARIABLE 2KOHM
RT 134	0104157	CHIP RESISTOR 1KOHM+-10% 1/8W
RT 135	5040084	SEMI VARIABLE 2KOHM
RT 201	5040085	SEMI VARIABLE 5KOHM
RT 215	5040084	SEMI VARIABLE 2KOHM
RT 217	5040086	SEMI VARIABLE 10KOHM
RT 218	5040086	SEMI VARIABLE 10KOHM
D 001	5337354	DIODE MA133
D 002	5337354	DIODE MA133
D 051	5328303	DIODE MA152WK(MU)
D 052	5332151	DIODE DS135D
D 201	5339181	DIODE HSM88S
D 204	5337041	DIODE MA159
D 205	5337353	DIODE MA132K
D 208	5337041	DIODE MA159
D 209	5337353	DIODE MA132K
D 210	5337353	DIODE MA132K
D 211	5337041	DIODE MA159
D 213	5337421	DIODE DAN222
D 214	5337353	DIODE MA132K
D 901	5337352	DIODE MA132WA
D 903	5337421	DIODE DAN222
D 904	5337352	DIODE MA132WA
D 905	5337422	DIODE DA221
D 906	5337352	DIODE MA132WA
D 907	5337351	DIODE MA132WK
D 908	5337354	DIODE MA133
D 910	5337354	DIODE MA133
D 911	5337354	DIODE MA133

SYMBOL-NO	P-NO	DISCRIPTION
D 912	5337354	DIODE MA133
D 913	5337354	DIODE MA133
D 914	5337351	DIODE MA132WK
D 915	5337353	DIODE MA132K
D 918	5337354	DIODE MA133
D 919	5337354	DIODE MA133
D 921	5339181	DIODE HSM88S
IC 001L	1351051	IC NJM2107F
IC 001R	1351051	IC NJM2107F
IC 201	1351971	IC CXA1207R
IC 202	1352001	IC CXA1208R
IC 203	1350041	IC HA118070FP
IC 204	1351981	IC CXL1506M
IC 206	1351211	IC HA118110FP
IC 207	1351211	IC HA118110FP
IC 209	1351221	IC HA118111FP
IC 210	1351221	IC HA118111FP
IC 211	1350402	IC NJM2234M
IC 212	1351991	IC CXL1203N
IC 401	1379069	PWB ASSY HTS9502H
IC 601	1361811	IC CXA1204Q
IC 602	5355513	IC LM2904M
IC 603	5307052	IC LB1851M
IC 604	5307052	IC LB1851M
IC 605	5355572	IC NJM4556M
IC 901	1355455	IC CXP80116
IC 904	1351601	IC MM1028BF
IC 905	1354281	IC BR93C46F
IC 906	5304281	IC TA7291F
IC 907	5352723	IC LM2903M
IC 908	5355513	IC LM2904M
IC 909	1351063	IC MC147805.0
IC 910	5307001	IC S-8052ALR-LF-S
IC 912	5355513	IC LM2904M
IC 915	5305832	IC SC7S08F
IC 916	5305822	IC SN7S32F
Q 001L	5328972	TRANSISTOR 2SC2412K-BRT
Q 001R	5328972	TRANSISTOR 2SC2412K-BRT
Q 002L	5328972	TRANSISTOR 2SC2412K-BRT
Q 002R	5328972	TRANSISTOR 2SC2412K-BRT
Q 001	1323291	TRANSISTOR 2SC4617
Q 091	1322341	TRANSISTOR PT4810F
Q 092	5382142	DIODE NJL5161K
Q 093	5382142	DIODE NJL5161K
Q 094	1322341	TRANSISTOR PT4810F
Q 201	1323291	TRANSISTOR 2SC4617
Q 202	1323291	TRANSISTOR 2SC4617
Q 203	1323291	TRANSISTOR 2SC4617
Q 204	1323291	TRANSISTOR 2SC4617
Q 205	1323291	TRANSISTOR 2SC4617
Q 206	1323291	TRANSISTOR 2SC4617
Q 207	1323291	TRANSISTOR 2SC4617
Q 208	1323291	TRANSISTOR 2SC4617
Q 210	1323171	TRANSISTOR UN9213
Q 211	1323291	TRANSISTOR 2SC4617
Q 212	1323231	TRANSISTOR 2SB1462
Q 213	1323231	TRANSISTOR 2SB1462
Q 217	1323171	TRANSISTOR UN9213
Q 218	1323231	TRANSISTOR 2SB1462
Q 219	1323231	TRANSISTOR 2SB1462
Q 220	5326421	TRANSISTOR 2SC4081BR
Q 221	1323172	TRANSISTOR UN9113
Q 222	1323171	TRANSISTOR UN9213
Q 223	1323291	TRANSISTOR 2SC4617
Q 225	5326481	TRANSISTOR XN4401

SYMBOL-NO	P-NO	DISCRIPTION
Q 228	1323252	TRANSISTOR XP4501
Q 229	1323231	TRANSISTOR 2SB1462
Q 230	1323231	TRANSISTOR 2SB1462
Q 231	1323291	TRANSISTOR 2SC4617
Q 232	1323231	TRANSISTOR 2SB1462
Q 233	1323291	TRANSISTOR 2SC4617
Q 234	1323171	TRANSISTOR UN9213
Q 235	1323231	TRANSISTOR 2SB1462
Q 236	1323231	TRANSISTOR 2SB1462
Q 238	1323172	TRANSISTOR UN9113
Q 241	1323291	TRANSISTOR 2SC4617
Q 242	1323291	TRANSISTOR 2SC4617
Q 243	1323291	TRANSISTOR 2SC4617
Q 244	1323171	TRANSISTOR UN9213
Q 245	1323291	TRANSISTOR 2SC4617
Q 246	1323171	TRANSISTOR UN9213
Q 247	1323231	TRANSISTOR 2SB1462
Q 248	1323171	TRANSISTOR UN9213
Q 249	1323291	TRANSISTOR 2SC4617
Q 250	1323231	TRANSISTOR 2SB1462
Q 251	1323301	TRANSISTOR 2SB1219
Q 252	1323171	TRANSISTOR UN9213
Q 253	1323172	TRANSISTOR UN9113
Q 254	1323171	TRANSISTOR UN9213
Q 255	1323171	TRANSISTOR UN9213
Q 256	1323171	TRANSISTOR UN9213
Q 257	1323171	TRANSISTOR UN9213
Q 258	1323231	TRANSISTOR 2SB1462
Q 259	1323301	TRANSISTOR 2SB1219
Q 260	1323171	TRANSISTOR UN9213
Q 261	1323172	TRANSISTOR UN9113
Q 262	1323291	TRANSISTOR 2SC4617
Q 265	1323291	TRANSISTOR 2SC4617
Q 266	1323172	TRANSISTOR UN9113
Q 267	1323171	TRANSISTOR UN9213
Q 268	1323231	TRANSISTOR 2SB1462
Q 269	1323172	TRANSISTOR UN9113
Q 270	5326103	TRANSISTOR FMS1
Q 271	1323171	TRANSISTOR UN9213
Q 272	1323231	TRANSISTOR 2SB1462
Q 602	1323291	TRANSISTOR 2SC4617
Q 603	1323231	TRANSISTOR 2SB1462
Q 604	1323291	TRANSISTOR 2SC4617
Q 605	5326222	TRANSISTOR DTC363
Q 607	1323291	TRANSISTOR 2SC4617
Q 608	1323291	TRANSISTOR 2SC4617
Q 609	1323231	TRANSISTOR 2SB1462
Q 610	1323291	TRANSISTOR 2SC4617
Q 901	1323291	TRANSISTOR 2SC4617
Q 902	5326512	TRANSISTOR 2SB1188 (Q)
Q 903	1323291	TRANSISTOR 2SC4617
Q 905	5326206	TRANSISTOR FMC2
Q 908	1323271	TRANSISTOR DTC144EE
Q 909	1323172	TRANSISTOR UN9113
Q 910	1323291	TRANSISTOR 2SC4617
Q 911	1323291	TRANSISTOR 2SC4617
Q 914	1323171	TRANSISTOR UN9213
Q 915	1323171	TRANSISTOR UN9213
Q 916	1323171	TRANSISTOR UN9213
Q 917	1323231	TRANSISTOR 2SB1462
Q 918	1323231	TRANSISTOR 2SB1462
Q 919	1323171	TRANSISTOR UN9213
Q 920	1323172	TRANSISTOR UN9113
ZD 902	5339213	DIODE RD2.7MB2
ZD 903	5328667	DIODE MA3043L

SYMBOL-NO	P-NO	DISCRIPTION
ZD 904	5339213	DIODE RD2.7MB2
L 201	0773132	CHOKE COIL 100UH+-5%
L 202	5159226	COIL 47UH
L 203	0773062	COIL 10UH
L 204	0773133	CHOKE COIL 120UH+-5%
L 205	0773136	CHOKE COIL 220UH+-5%
L 206	5159258	CHOKE COIL 2.7UH
L 207	5159252	CHOKE COIL 33UH
L 209	5159247	CHOKE COIL 15UH+-10%
L 210	0773094	CHOKE COIL 100UH+-10%
L 211	0773092	CHOKE COIL 47UH+-10%
L 212	5159246	CHOKE COIL 10UH+-10%
L 213	0773062	COIL 10UH
L 214	5159227	COIL 56UH
L 215	0773092	CHOKE COIL 47UH+-10%
L 216	0773132	CHOKE COIL 100UH+-5%
L 217	0773136	CHOKE COIL 220UH+-5%
L 218	0773133	CHOKE COIL 120UH+-5%
L 219	0773132	CHOKE COIL 100UH+-5%
L 221	5159249	CHOKE COIL 22UH+-10%
L 222	0773132	CHOKE COIL 100UH+-5%
L 223	0773092	CHOKE COIL 47UH+-10%
L 224	0773094	CHOKE COIL 100UH+-10%
L 225	5129271	CHOKE COIL 68UH
L 226	0773094	CHOKE COIL 100UH+-10%
L 227	5129271	CHOKE COIL 68UH
L 228	5129271	CHOKE COIL 68UH
L 229	5129271	CHOKE COIL 68UH
L 230	5129271	CHOKE COIL 68UH
L 231	5159251	CHOKE COIL 27UH+-10%
L 233	0773134	CHOKE COIL 150UH+-5%
L 234	5159249	CHOKE COIL 22UH+-10%
L 235	5159177	COIL 470UH
L 236	5159256	COIL 180UH
L 237	0773054	CHOKE COIL 2.7UH+-10%
L 239	5159245	CHOKE COIL 6.8UH
L 240	5159227	COIL 56UH
L 243	0773097	CHOKE COIL 330UH+-10%
L 244	0773094	CHOKE COIL 100UH+-10%
L 245	0773094	CHOKE COIL 100UH+-10%
L 601	0773094	CHOKE COIL 100UH+-10%
L 602	0773097	CHOKE COIL 330UH+-10%
L 603	0773094	CHOKE COIL 100UH+-10%
L 604	0773097	CHOKE COIL 330UH+-10%
L 901	0773092	CHOKE COIL 47UH+-10%
L 902	0773094	CHOKE COIL 100UH+-10%
L 903	0773087	CHOKE COIL 10UH+-10%
L 904	0773087	CHOKE COIL 10UH+-10%
L 906	0773092	CHOKE COIL 47UH+-10%
X 201	5778631	CRYSTAL
X 601	5778621	CRYSTAL
X 901	5778351	CRYSTAL
CP 201	5172522	FILTER, LOW PASS
CP 202	5172521	FILTER, LOW PASS
CP 203	5170132	FILTER
CP 204	5172572	FILTER
CP 205	5172515	FILTER
CP 206	5148231	CHOKE COIL
CP 207	5172523	DELY LINE
CP 208	5172571	FILTER, BAND PASS
CP 209	5172475	FILTER
CP 210	5172493	TRAP, COIL
CP 211	5172521	FILTER, LOW PASS
S 091	5635461	SWITCH
S 092	5635451	SWITCH

SYMBOL-NO	P-NO	DISCRIPTION
SW 001	5622561	SWITCH
J 001	5674492	JACK
F 051	5721838	FUSE 1.6A
F 052	5721838	FUSE 1.6A
F 053	5721838	FUSE 1.6A
CT1201	5058576	CAPACTOR TRIMMER
CAMERA SECTION		
C1001	0202146	CERAMIC CHIP 1UF+80-20% 16V
C1002	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C1004	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C1005	0202162	CERAMIC CHIP 0.47UF+80-20% 16V
C1006	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C1008	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1009	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1012	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1015	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1016	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1017	0202045	CERAMIC DISC 22PF+-5% 50V
C1018	0202057	CERAMIC CHIP 180PF+-5% 50V
C1020	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1021	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1023	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1024	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1025	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1026	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1210	0202146	CERAMIC CHIP 1UF+80-20% 16V
C1217	0202146	CERAMIC CHIP 1UF+80-20% 16V
C1301	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1302	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1304	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1305	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1306	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1308	0202057	CERAMIC CHIP 180PF+-5% 50V
C1310	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1315	0202049	CERAMIC DISC 47PF+-5% 50V
C1316	0202049	CERAMIC DISC 47PF+-5% 50V
C1318	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1319	0202049	CERAMIC DISC 47PF+-5% 50V
C1320	0202049	CERAMIC DISC 47PF+-5% 50V
C1321	0202049	CERAMIC DISC 47PF+-5% 50V
C1322	0202049	CERAMIC DISC 47PF+-5% 50V
C1323	0202049	CERAMIC DISC 47PF+-5% 50V
C1324	0893126	CERAMIC CHIP 100PF+-5% 50V
C1325	0202096	CERAMIC CHIP 0.047UF+80-20% 16V
C1326	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1327	0202089	CERAMIC CHIP 33PF+-5% 50V
C1328	0202054	CERAMIC CHIP 100PF+-5% 50V
C1329	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1330	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1331	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1334	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1335	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1336	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1338	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1339	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1341	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1342	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1343	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1344	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1346	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1347	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1348	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C1349	0202141	CERAMIC CHIP 0.1UF+-10% 25V
C1350	0202141	CERAMIC CHIP 0.1UF+-10% 25V

SYMBOL-NO	P-NO	DISCRIPTION
C1351	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1352	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1354	0209969	CERAMIC CHIP 0.1UF+80-20% 25V
C1355	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1356	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1357	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1358	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1359	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1361	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1363	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C1364	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1366	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C1367	0202084	CERAMIC CHIP 12PF+-5% 50V
C1368	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1369	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1370	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1371	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1372	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1373	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1374	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1375	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1376	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1377	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1380	0202127	CERAMIC CHIP 0.01UF+80-20% 50V
C1381	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1382	0202092	CERAMIC CHIP 47PF+-5% 50V
C1383	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1384	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1385	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1386	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1387	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1388	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1389	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1390	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1391	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1394	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1395	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1397	0202076	CERAMIC CHIP 4PF+-0.25PF 50V
C1398	0202076	CERAMIC CHIP 4PF+-0.25PF 50V
C1401	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1402	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1403	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1404	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1405	0202048	CERAMIC DISC 39PF+-5% 50V
C1951	0202109	CERAMIC CHIP 1000PF+-10% 50V
C1952	0202129	CERAMIC CHIP 0.022UF+80-20% 25V
C1953	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1957	0202089	CERAMIC CHIP 33PF+-5% 50V
C1958	0202085	CERAMIC CHIP 15PF+-5% 50V
C1959	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
C1964	0202098	CERAMIC CHIP 0.1UF+80-20% 16V
RT1201	5040088	SEMI VARIABLE 50KOHM
RT1202	5040086	SEMI VARIABLE 10KOHM
RT1203	5040088	SEMI VARIABLE 50KOHM
RT1204	5040088	SEMI VARIABLE 50KOHM
RT1205	5040084	SEMI VARIABLE 2KOHM
RT1209	5040086	SEMI VARIABLE 10KOHM
RT1210	5040085	SEMI VARIABLE 5KOHM
RT1211	5040087	SEMI VARIABLE 20KOHM
RT1213	5040089	SEMI VARIABLE 100KOHM
RT1214	5040089	SEMI VARIABLE 100KOHM
RT1215	5040089	SEMI VARIABLE 100KOHM
R1001	0104066	CHIP RESISTOR 180KOHM+-5% 1/16W
R1002	0104056	CHIP RESISTOR 27KOHM+-5% 1/16W
R1003	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R1004	0104011	CHIP RESISTOR 10 OHM+-5% 1/16W
R1005	0104011	CHIP RESISTOR 10 OHM+-5% 1/16W
R1006	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R1007	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R1008	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1009	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1010	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1011	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R1012	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1013	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1015	0104013	CHIP RESISTOR 15 OHM+-5% 1/16W
R1016	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R1017	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1018	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1019	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R1020	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1021	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R1022	0104067	CHIP RESISTOR 220KOHM+-5% 1/16W
R1023	0104068	CHIP RESISTOR 270KOHM+-5% 1/16W
R1201	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1202	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1203	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1204	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R1205	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1206	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1207	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1208	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1209	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1210	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1212	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R1213	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1214	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1215	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1216	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1217	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1218	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1219	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1222	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1224	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R1225	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1226	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1227	0104066	CHIP RESISTOR 180KOHM+-5% 1/16W
R1228	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1229	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1231	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1232	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1233	0104054	CHIP RESISTOR 18KOHM+-5% 1/16W
R1234	0104059	CHIP RESISTOR 56KOHM+-5% 1/16W
R1235	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R1236	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1237	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1239	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1240	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R1241	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1242	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1243	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1244	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1245	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1248	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1249	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1250	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1251	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1252	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R1253	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1254	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R1255	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1256	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1257	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1258	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1259	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1260	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R1261	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1262	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1263	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1264	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1266	0104506	CHIP RESISTOR 1.27KOHM+-1% 1/16W
R1267	0104531	CHIP RESISTOR 78.7KOHM+-1% 1/16W
R1268	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1270	0104513	CHIP RESISTOR 1.87KHOM+-1% 1/16W
R1271	0104516	CHIP RESISTOR 2.05KOHM+-1% 1/16W
R1272	0104525	CHIP RESISTOR 5.62KOHM+-1% 1/16W
R1273	0104525	CHIP RESISTOR 5.62KOHM+-1% 1/16W
R1274	0104511	CHIP RESISTOR 1.54KOHM+-1% 1/16W
R1275	0104505	CHIP RESISTOR 1.15KOHM+-1% 1/16W
R1276	0104528	CHIP RESISTOR 10.5KOHM+-1% 1/16W
R1277	0104523	CHIP RESISTOR 4.99KOHM+1% 1/16W
R1278	0104507	CHIP RESISTOR 1.3KOHM+-1% 1/16W
R1279	0104513	CHIP RESISTOR 1.87KOHM+-10% 1/16W
R1280	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1281	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1282	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1283	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1284	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1285	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1286	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1287	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1288	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1289	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1290	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1291	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1292	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1294	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1295	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1301	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1304	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1306	0104066	CHIP RESISTOR 180KOHM+-5% 1/16W
R1307	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R1308	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1309	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1310	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1311	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R1312	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1313	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1314	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1315	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1316	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R1317	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1318	0104062	CHIP RESISTOR 82KOHM+-5% 1/16W
R1319	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1321	0104035	CHIP RESISTOR 680 OHM+-5% 1/16W
R1322	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1324	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1325	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1326	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1327	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1328	0104064	CHIP RESISTOR 120KOHM+-5% 1/16W
R1329	0104065	CHIP RESISTOR 150KOHM+-5% 1/16W
R1330	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1332	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1335	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R1337	0104059	CHIP RESISTOR 56KOHM+-5% 1/16W
R1338	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1339	0104065	CHIP RESISTOR 150KOHM+-5% 1/16W
R1341	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1342	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1343	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1345	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1346	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1348	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W
R1349	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1350	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1351	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1353	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1354	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1355	0104074	CHIP RESISTOR 680KOHM+-5% 1/16W
R1358	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1359	0104525	CHIP RESISTOR 5.62KOHM+-1% 1/16W
R1360	0104525	CHIP RESISTOR 5.62KOHM+-1% 1/16W
R1361	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1362	0104029	CHIP RESISTOR 270 OHM+-5% 1/16W
R1363	0104074	CHIP RESISTOR 680KOHM+-5% 1/16W
R1364	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1365	0104054	CHIP RESISTOR 18KOHM+-5% 1/16W
R1366	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1367	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1368	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1369	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1370	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1371	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1372	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1373	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1374	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1375	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1376	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R1377	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R1378	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1379	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R1380	0104068	CHIP RESISTOR 270KOHM+-5% 1/16W
R1381	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1382	0104068	CHIP RESISTOR 270KOHM+-5% 1/16W
R1384	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1385	0104055	CHIP RESISTOR 22KOHM+-5% 1/16W
R1387	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1388	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1389	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1390	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1391	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R1394	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W
R1395	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1396	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1397	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1398	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1399	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R1400	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R1401	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1402	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1403	0104074	CHIP RESISTOR 680KOHM+-5% 1/16W
R1404	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1407	0104521	CHIP RESISTOR 4.12KOHM+-1% 1/16W
R1408	0104527	CHIP RESISTOR 8.25KOHM+-1% 1/16W
R1409	0104041	CHIP RESISTOR 1.8KOHM+-5% 1/16W
R1410	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1411	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1412	0104048	CHIP RESISTOR 6.8KOHM+-5% 1/16W
R1413	0104044	CHIP RESISTOR 3.3KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R1414	0104034	CHIP RESISTOR 560 OHM+-5% 1/16W
R1415	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1416	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1417	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1418	0104052	CHIP RESISTOR 12KOHM+-5% 1/16W
R1419	0104021	CHIP RESISTOR 56 OHM+-5% 1/16W
R1421	0104059	CHIP RESISTOR 56KOHM+-5% 1/16W
R1427	0104026	CHIP RESISTOR 150 OHM+-5% 1/16W
R1429	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1430	0104536	CHIP RESISTOR 3KOHM+-1% 1/16W
R1431	0104511	CHIP RESISTOR 1.54KOHM+-1% 1/16W
R1447	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1448	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1450	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1452	0104061	CHIP RESISTOR 68KOHM+-5% 1/16W
R1454	0104028	CHIP RESISTOR 220 OHM+-5% 1/16W
R1455	0104015	CHIP RESISTOR 22 OHM+-5% 1/16W
R1462	0104049	CHIP RESISTOR 8.2KOHM+-5% 1/16W
R1463	0104045	CHIP RESISTOR 3.9KOHM+-5% 1/16W
R1468	0104059	CHIP RESISTOR 56KOHM+-5% 1/16W
R1469	0104036	CHIP RESISTOR 820 OHM+-5% 1/16W
R1470	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1471	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1473	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1474	0104039	CHIP RESISTOR 1.5KOHM+-5% 1/16W
R1475	0104063	CHIP RESISTOR 100KOHM+-5% 1/16W
R1476	0104038	CHIP RESISTOR 1.2KOHM+-5% 1/16W
R1477	0104069	CHIP RESISTOR 330KOHM+-5% 1/16W
R1478	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1479	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1480	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1481	0104025	CHIP RESISTOR 120 OHM+-5% 1/16W
R1482	0104043	CHIP RESISTOR 2.7KOHM+-5% 1/16W
R1483	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1488	0104083	CHIP RESISTOR 33KOHM+-5% 1/16W
R1489	0104042	CHIP RESISTOR 2.2KOHM+-5% 1/16W
R1490	0104047	CHIP RESISTOR 5.6KOHM+-5% 1/16W
R1901	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1902	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1903	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1904	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1905	0104053	CHIP RESISTOR 15KOHM+-5% 1/16W
R1906	0104057	CHIP RESISTOR 39KOHM+-5% 1/16W
R1909	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1910	0104584	CHIP RESISTOR 47KOHM+-5% 1/32W
R1912	0104581	CHIP RESISTOR 1KOHM+-5% 1/32W
R1913	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1914	0104581	CHIP RESISTOR 1KOHM+-5% 1/32W
R1915	0104581	CHIP RESISTOR 1KOHM+-5% 1/32W
R1916	0104031	CHIP RESISTOR 330 OHM+-5% 1/16W
R1917	0104584	CHIP RESISTOR 47KOHM+-5% 1/32W
R1918	0104584	CHIP RESISTOR 47KOHM+-5% 1/32W
R1921	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1922	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1923	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1924	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1925	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1926	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1927	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1928	0104076	CHIP RESISTOR 1000KOHM+-5% 1/16W
R1929	0104017	CHIP RESISTOR 33 OHM+-5% 1/16W
R1931	0104581	CHIP RESISTOR 1KOHM+-5% 1/32W
R1933	0104581	CHIP RESISTOR 1KOHM+-5% 1/32W
R1935	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1936	0104072	CHIP RESISTOR 470KOHM+-5% 1/16W

SYMBOL-NO	P-NO	DISCRIPTION
R1942	0104071	CHIP RESISTOR 390KOHM+-5% 1/16W
R1943	0104583	CHIP RESISTOR 10KOHM+-5% 1/32W
R1945	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1946	0104525	CHIP RESISTOR 5.62KOHM+-1% 1/16W
R1955	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1956	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1957	0104583	CHIP RESISTOR 10KOHM+-5% 1/32W
R1958	0104583	CHIP RESISTOR 10KOHM+-5% 1/32W
R1959	0104581	CHIP RESISTOR 1KOHM+-5% 1/32W
R1960	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1961	0104058	CHIP RESISTOR 47KOHM+-5% 1/16W
R1962	0104046	CHIP RESISTOR 4.7KOHM+-5% 1/16W
R1965	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1967	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1968	0104051	CHIP RESISTOR 10KOHM+-5% 1/16W
R1969	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1970	0104033	CHIP RESISTOR 470 OHM+-5% 1/16W
R1971	0104037	CHIP RESISTOR 1KOHM+-5% 1/16W
R1972	0104024	CHIP RESISTOR 100 OHM+-5% 1/16W
D1001	5337353	DIODE MA132K
D1002	5337353	DIODE MA132K
D1003	5337353	DIODE MA132K
D1004	5337354	DIODE MA133
D1005	5337353	DIODE MA132K
D1006	5337352	DIODE MA132WA
D1203	5337351	DIODE MA132WK
D1204	5337353	DIODE MA132K
D1206	5337031	DIODE 1SV201
D1207	5337353	DIODE MA132K
D1209	5337353	DIODE MA132K
D1901	5337353	DIODE MA132K
D1902	5337353	DIODE MA132K
D1903	5337353	DIODE MA132K
D1904	5337351	DIODE MA132WK
D1905	5337351	DIODE MA132WK
D1906	5337353	DIODE MA132K
D1907	5337351	DIODE MA132WK
D1908	5337353	DIODE MA132K
D1909	5337353	DIODE MA132K
D1910	5337351	DIODE MA132WK
D1911	5337353	DIODE MA132K
D1912	5337354	DIODE MA133
D1913	5337354	DIODE MA133
IC1001	5318291	CCD IMAGE DEVICE ICX027BX
IC1201	1351532	IC CXD1250M
IC1202	1354212	IC UPD65025-36
IC1203	1351581	IC HA118120
IC1204	1350602	IC MN3817S
IC1205	5304141	IC HA118003MP
IC1206	1351672	IC HA118142A
IC1207	1350262	IC NJM2225M
IC1208	5355513	IC LM2904M
IC1210	1351681	IC NJM2256M
IC1211	1372496	IC HT5846E
IC1214	5367391	IC HA11883MP
IC1215	5352722	IC LM2903M
IC1901	1355377	IC UPD75008GB608
IC1902	1352023	IC UPD6451AGT-803
IC1903	1351761	IC NJM2406F
IC1920	1379315	PWB ASSY HTS9507D
Q1001	1323321	TRANSISTOR 2SD2216
Q1002	1323321	TRANSISTOR 2SD2216
Q1003	1323331	TRANSISTOR 2SA1806
Q1004	1323341	TRANSISTOR 2SC4691
Q1005	1323341	TRANSISTOR 2SC4691

SYMBOL-NO	P-NO	DISCRIPTION
Q1006	1323331	TRANSISTOR 2SA1806
Q1007	1323361	TRANSISTOR XP1501
Q1008	1323321	TRANSISTOR 2SD2216
Q1201	1323321	TRANSISTOR 2SD2216
Q1202	1323321	TRANSISTOR 2SD2216
Q1203	1323253	TRANSISTOR XP4401
Q1207	1323252	TRANSISTOR XP4501
Q1210	1323231	TRANSISTOR 2SB1462
Q1211	1323321	TRANSISTOR 2SD2216
Q1212	1323231	TRANSISTOR 2SB1462
Q1213	1323321	TRANSISTOR 2SD2216
Q1214	1323321	TRANSISTOR 2SD2216
Q1215	1323321	TRANSISTOR 2SD2216
Q1216	1323231	TRANSISTOR 2SB1462
Q1217	1323231	TRANSISTOR 2SB1462
Q1218	1323231	TRANSISTOR 2SB1462
Q1219	1323231	TRANSISTOR 2SB1462
Q1220	1323231	TRANSISTOR 2SB1462
Q1224	1323321	TRANSISTOR 2SD2216
Q1227	1323172	TRANSISTOR UN9113
Q1228	1323171	TRANSISTOR UN9213
Q1229	1323171	TRANSISTOR UN9213
Q1230	1323321	TRANSISTOR 2SD2216
Q1231	1323321	TRANSISTOR 2SD2216
Q1232	1323231	TRANSISTOR 2SB1462
Q1233	1323252	TRANSISTOR XP4501
Q1236	1323171	TRANSISTOR UN9213
Q1237	1323231	TRANSISTOR 2SB1462
Q1240	5326103	TRANSISTOR FMS1
Q1243	1323231	TRANSISTOR 2SB1462
Q1244	1323231	TRANSISTOR 2SB1462
Q1246	1323321	TRANSISTOR 2SD2216
Q1247	5326101	TRANSISTOR FMW1
Q1248	1323231	TRANSISTOR 2SB1462
Q1249	1323321	TRANSISTOR 2SD2216
Q1903	5326101	TRANSISTOR FMW1
Q1905	5326101	TRANSISTOR FMW1
Q1908	1323172	TRANSISTOR UN9113
L1001	5159242	COIL 1.5UH
L1002	0773062	COIL 10UH
L1201	5159242	COIL 1.5UH
L1202	5159246	CHOKE COIL 10UH+-10%
L1203	0773004	COIL 100UH
L1204	0773003	COIL 47UH
L1205	0773087	CHOKE COIL 10UH+-10%
L1207	0773001	CHOCE COIL 10UH+-10%
L1208	5159246	CHOKE COIL 10UH+-10%
L1209	5159246	CHOKE COIL 10UH+-10%
L1210	5159231	COIL 100UH+-10%
L1901	5159246	CHOKE COIL 10UH+-10%
L1903	5159246	CHOKE COIL 10UH+-10%
X1201	5778642	CRYSTAL
X1901	5783001	CRYSTAL
X1902	5778261	CRYSTAL
CP1901	5172136	FILTER
DL1201	5172174	DELAY LINE
DL1202	5172043	FILTER,LOW PASS

ELECTRONIC VIEWFINDER SECTION

SYMBOL-NO	P-NO	DISCRIPTION
C 801	0255134	ELECTROLYTIC 47UF 16V
C 802	0255134	ELECTROLYTIC 47UF 16V
C 804	0268459	CERAMIC CHIP 2700PF+-5% 100V
C 805	0256871	ELECTROLYTIC 47UF 25V
C 806	0249655	CERAMIC CHIP 1000PF+-10% 1KV
C 807	0249656	CERAMIC CHIP 1000PF+-10% 500V
C 808	0256752	ELECTROLYTIC 3.3UF 63V
C 809	0201997	CERAMIC DISC 0.1UF+80-20% 50V
C 811	0201036	CERAMIC CHIP 270PF+-5% 50V
C 812	0201997	CERAMIC DISC 0.1UF+80-20% 50V
C 814	0201069	CERAMIC CHIP 0.1UF+80-20% 25V
C 815	0268521	CERAMIC CHIP 0.1UF+-10% 50V
C 816	0202151	CERAMIC CHIP 2200PF+-5% 50V
C 817	0201007	CERAMIC CHIP 0.01UF+-20% 50V
C 819	0202146	CERAMIC CHIP 1UF+80-20% 16V
R 801	0103852	CHIP RESISTOR 5.6KOHM+-5% 0.1W
R 802	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R 803	0103875	CHIP RESISTOR 470KOHM+-5% 0.1W
R 804	0103881	CHIP RESISTOR 2.2MOHM+-10% 0.1W
R 805	0103881	CHIP RESISTOR 2.2MOHM+-10% 0.1W
R 806	01038173	CHIP RESISTOR 6.8OHM+-10% 0.1W
R 807	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R 808	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R 809	0103862	CHIP RESISTOR 39KOHM+-5% 0.1W
R 810	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R 811	0103844	CHIP RESISTOR 1.2KOHM+-5% 0.1W
R 812	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R 813	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R 814	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R 815	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R 816	0103814	CHIP RESISTOR 3.9OHM+-5% 0.1W
R 817	0103840	CHIP RESISTOR 560 OHM+-5% 0.1W
R 818	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R 819	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R 820	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R 821	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R 822	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R 823	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R 826	0103876	CHIP RESISTOR 560KOHM+-5% 0.1W
R 827	0103838	CHIP RESISTOR 390 OHM+-5% 0.1W
R 828	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
RT 802	5006273	SEMI VARIABLE 470 OHM
RT 803	5007793	SEMI VARIABLE 2.2MOHM
RT 805	5007468	SEMI VARIABLE 1MOHM
D 801	5328321	DIODE MA151K (MH)
D 802	5337321	DIODE MA199
D 803	5381669	DIODE SLH34VC3F
IC 801	1351631	IC HA118121FP
Q 801	1323131	TRANSISTOR 2SD968A (R/S)
Q 802	5328241	TRANSISTOR 2SC2463E(DE)
Q 803	5326254	TRANSISTOR DTC143TK
T 801	5240484	TRANSFORMER,FLYBACK
L 801	0773003	COIL 47UH
L 802	5244012	COIL
CS 801	5886235	SOCKET

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